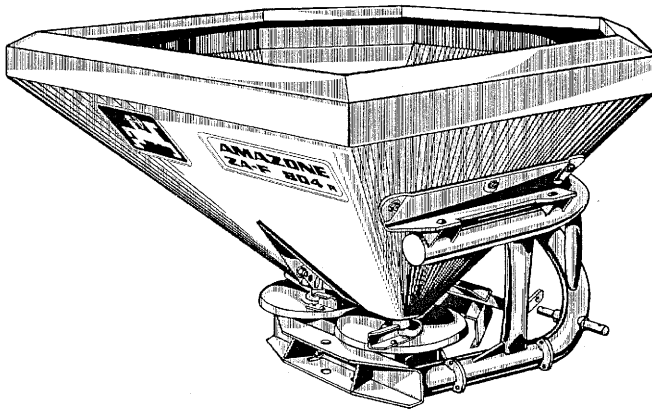





Centrifugal Broadcaster  
**AMAZONE ZA-F**  
Operation Manual



MG 444  
DB 523 (GB) 01.98  
Printed in Germany



 Before starting work,  
please carefully read  
and adhere to this operation  
manual and safety advice!



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D-49202 Hasbergen-Gaste/F. R. Germany

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The **AMAZONE ZA-F** is a centrifugal broadcaster from the comprehensive variety of AMAZONE agricultural machinery.

The mature technique in conjunction with the correct handling provides an optimum and implement saving operation.

**We therefore ask you to carefully adhere to this operation manual as we will not be able to accept claims under guarantee for any damages resulting from incorrect operation.**

Please enter the serial number of your broadcaster here. You will find the number on the type plate in the frame.

Please always quote the machine type and serial number when ordering spare parts or making enquiries:

Centrifugal broadcaster **AMAZONE ZA-F** \_\_\_\_\_

Machine serial-No.: \_\_\_\_\_

Your broadcaster complies only with the regulations of the agricultural health and safety authorities when in case of repair **original spare parts of AMAZONE** are used for replacement.

**Please carefully read this instruction manual before starting to operate your machine. Especially adhere to the safety advice of the instruction manual and the warning symbols on your machine.**



**Store and move the centrifugal broadcaster only with empty hopper (otherwise danger of tipping over)!**



Contents .....	Page
<b>1.0 Details about the machine .....</b>	<b>1 - 1</b>
1.1 Manufacturer .....	1 - 1
1.2 Technical data .....	1 - 1
1.3 Details about noise level .....	1 - 1
<b>2.0 Important hints .....</b>	<b>2 - 1</b>
2.1 Safety-/Warning symbol .....	2 - 1
2.2 Attention symbol .....	2 - 1
2.3 Hint-symbol .....	2 - 1
2.4 Warning pictographs and hint symbols on the machine .....	2 - 1
2.5 On receipt of the machine .....	2 - 6
2.6 Declined use of the machine .....	2 - 6
<b>3.0 General safety and accident preventive advice .....</b>	<b>3 - 1</b>
3.1 Tractor mounted implements .....	3 - 4
3.2 Universal joint shaft (pto-shaft) .....	3 - 4
3.3 Hydraulic system .....	3 - 5
3.4 General safety and accident prevention advice for maintenance, repair and cleaning .....	3 - 6
<b>4.0 Centrifugal broadcaster AMAZONE ZA-F .....</b>	<b>4 - 1</b>
<b>5.0 Mounting .....</b>	<b>5 - 1</b>
5.1 Pto-shaft .....	5 - 1
5.1.1 Fitting and matching the pto shaft .....	5 - 1
<b>6.0 On route to the field - Transport on public roads .....</b>	<b>6 - 0</b>
<b>7.0 Setting and use of the fertiliser broadcaster .....</b>	<b>7 - 1</b>
7.1 Setting the working width (mounting height) .....	7 - 1
7.1.1 Normal fertilising .....	7 - 3
7.1.2 Late top dressing .....	7 - 3
7.2 Setting the spread rate .....	7 - 5
7.2.1 With setting chart .....	7 - 5
7.2.2 Without setting chart with the calibration device (option) .....	7 - 7
7.3 Halfsided boundary spreading with border spread deflector (option) (Tramline centre 1,5 up to 2,0 m from the field's border) .....	7 - 9
7.4 Hints for special setting chart .....	7 - 10
7.4.1 Hints for spreading slug pellets (e.g. Mesurol) .....	7 - 10
7.4.2 Hints for spreading oil seeds .....	7 - 11
<b>8.0 Special advice for operation .....</b>	<b>8 - 0</b>
<b>9.0 Cleaning, maintenance and repair .....</b>	<b>9 - 1</b>





Contents .....	Page
<b>10.0 Options .....</b>	<b>10 - 1</b>
10.1 Folding sieve to retain foreign object .....	10 - 1
10.2 Boundary spread deflector .....	10 - 1
10.3 Mobile stand .....	10 - 1
10.4 Folding hopper cover .....	10 - 1
10.5 Hopper cover .....	10 - 1
10.6 Crop deflector .....	10 - 3
10.7 Traffic lights for AMAZONE-mounted implements .....	10 - 3
10.8 Traffic light carrier .....	10 - 3
10.9 Mixing agitator .....	10 - 3
10.10 Agitator head disengagement .....	10 - 3
10.11 Four-row band spreading device .....	10 - 3
10.12 Two-row spreading device for hop .....	10 - 3
10.13 Row spreading device for orchards .....	10 - 5
10.14 Hydraulic shutter control .....	10 - 5
10.14.1 Hydraulic shutter control "I" .....	10 - 5
10.14.2 Hydraulic shutter control "II" .....	10 - 5
10.14.3 Fitting the hydraulic shutter control "I" or "II" .....	10 - 5
10.15 Hydraulic combi lever .....	10 - 7
10.15.1 Hydraulic combi lever "I" .....	10 - 7
10.15.2 Hydraulic combi lever "II" .....	10 - 7
10.15.3 Fitting the hydraulic combi lever "I" or "II" .....	10 - 7
10.16 Two-way unit (retrofit kit) .....	10 - 9
10.17 Calibration device .....	10 - 11
10.18 Mobile fertiliser test kit for working width control .....	10 - 11
10.19 Setting gauge for setting the basic shutter slide position .....	10 - 11
<b>11.0 Combination matrix for fertiliser broadcasters for spreading slug pellets .....</b>	<b>11 - 0</b>

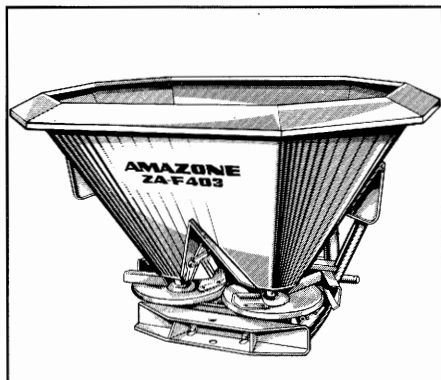


Fig. 1.1

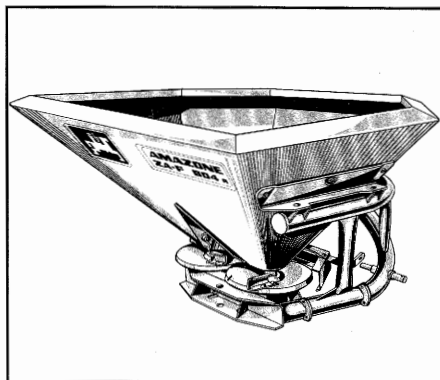


Fig. 1.2

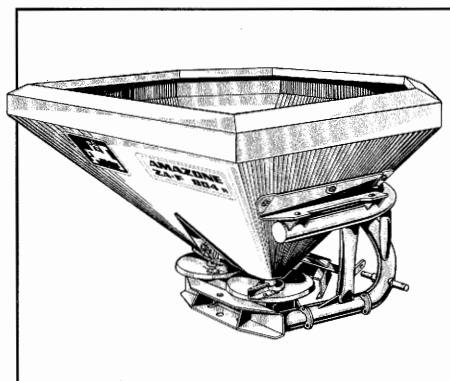


Fig. 1.3

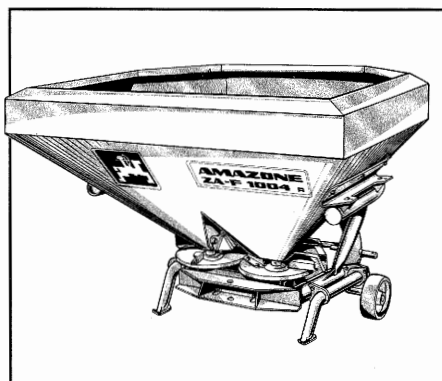


Fig. 1.4



## 1.0 Details about the machine

### 1.1 Manufacturer

AMAZONEN-WERKE, H. Dreyer GmbH & Co. KG, P. O. Box 51, D-49202 Hasbergen-Gaste/  
Germany.

### 1.2 Technical data

Type ZA-F	403	604 R	804 R	1004 R	1204 R
hopper capacity [l]	400	620	800	1000	1170
Payload [kg]	500	800	1200	1200	1200
Net weight [kg]	126	173	181	189	197
Filling height [m]	0,89	0,89	0,98	1,05	1,15
Filling width [m]	1,29	1,51	1,51	1,51	1,51
Length [m]	1,08	1,31	1,31	1,31	1,31
Width [m]	1,45	1,67	1,67	1,67	1,67
Standard execution	Manual shutter slide control, Swivel blades for late top dressing, Shutter slide and removable hopper bottoms from non corrosive steel, retainer for mobile stand, Walterscheid-pto shaft W2100-SC05-710 resp. W2100-SC05-560 (ZA-F 403), Instruction manual and setting chart				

Fig. 1.1 ZA-F 403

Fig. 1.2 ZA-F 604 R

Fig. 1.3 ZA-F 804 R

Fig. 1.4 ZA-F 1004 R with mobile stand (option)

### 1.3 Details about noise level

The tractor operator seat related emission value is 74 dB (A), measured when operating with shut tractor cab at the ear of the tractor operator with the implement OPTAC SLM 5.

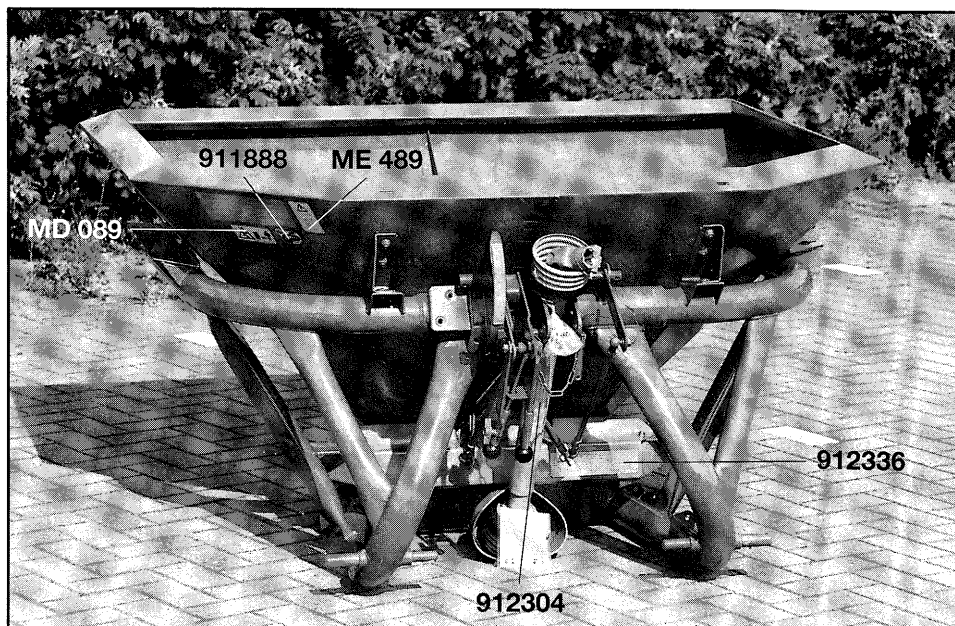


Fig. 2.1

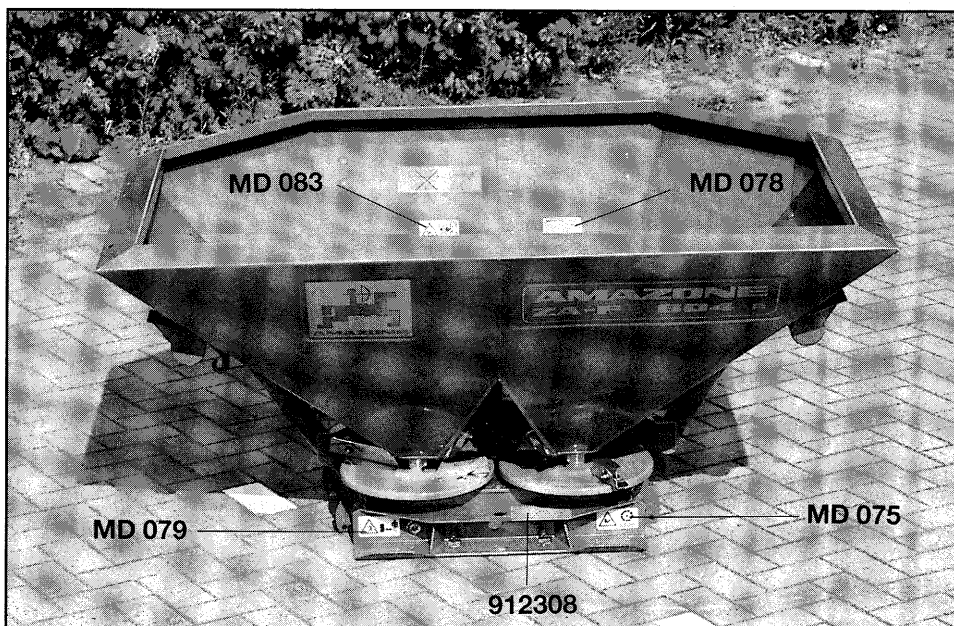


Fig. 2.2



## 2.0 Important hints

### 2.1 Safety-/Warning-Symbol



In this operator instruction manual this symbol is used with all operator safety hints at which life or health of persons is in danger. Please adhere to these hints and be especially careful in such cases. Please pass on all operator safety hints to other users of this machine. Besides the hints in this operator instruction also general safety and accident preventive advice should be adhered to.

### 2.2 Attention Symbol



This symbol will always be found in such places of this instruction book which should especially be adhered to in order to comply with rules, advice, hints and the correct procedure of the operation as well as to prevent damage to the implement.

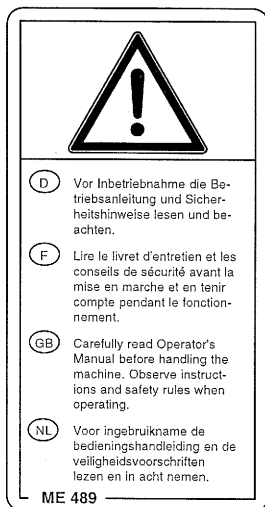
### 2.3 Hint Symbol



This symbol marks machine's specific points which should be observed to ensure correct operation.

## 2.4 Warning pictographs and hint symbols on the machine

- The warning pictographs indicate dangerous points on the machine. Observing these pictographs means safety for all persons using this machine. The warning pictographs always come together with safety/warning symbols.
- The hint symbols mark machine's specific points which have to be observed to ensure a correct function of the machine.
- Strictly observe all warning pictographs and hint symbols!
- Please pass on all safety advice to other users!
- Please keep all warning pictographs and hint signs clean and in good condition. Please ask for replacement for damaged or missing signs from your dealer and attach to relevant place! (picture-No.: = Order-No.:)
- Fig. 2.1 and Fig. 2.2 show the fixing points of warning pictographs and hint signs. Please refer to the following pages for relevant explanations.



Picture No.: ME 489

**Explanation:**

Before commencing operation read thoroughly operation manual and safety advice!



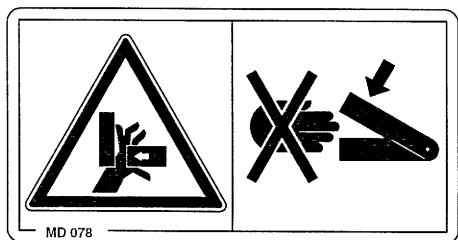
Picture No.: MD 075

**Explanation:**

Do not stay within the zone of spinning spreading discs!

Do not touch moving parts! Await until stationary.

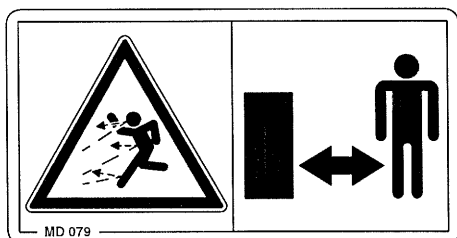
Disengage pto-shaft, stop the engine, and remove the ignition key before exchanging the spreading discs!



Picture No.: MD 078

**Explanation:**

Never reach into the danger zone. Danger of bruising (e. g. shutter slides and shutter openings) as long as parts can still move there!

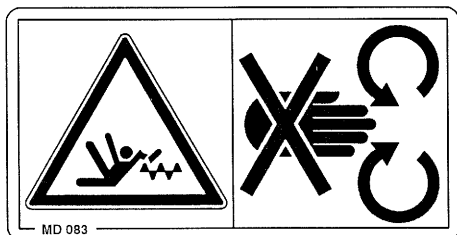


Picture No.: MD 079

**Explanation:**

Danger because of flinging fertiliser particles!

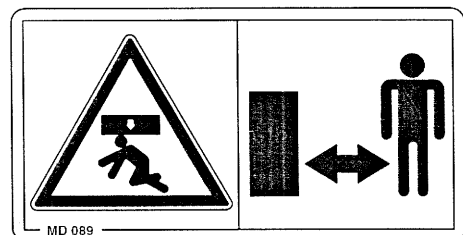
Advise people to leave the danger area!



Picture No.: MD 083

**Explanation:**

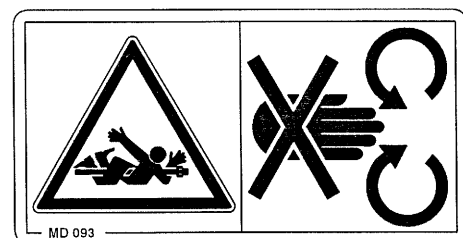
Never reach into the rotating agitator spiral!



Picture No.: MD 089

**Explanation:**

Never stay under a lifted fertiliser spreader (unsecured load)!



Picture No.: MD 093

**Explanation:**

Danger by rotating machine parts!

Never touch rotating shafts, spreading discs etc.!



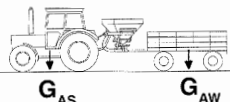
Bild-Nr.: 912 304



- (D) Gelenkwellenlänge beachten (sonst Getriebschaden). Siehe Betriebsanleitung.
- (F) Veiller impérativement à la longueur de la transmission (risque d'endommagement du boîtier). Voir le manuel d'utilisation.
- (GB) Check correct p.t.o. shaft length (otherwise gearbox damage will result). - see instruction book.
- (NL) Geeft aandacht aan de lengte van de aftakas zoals de gebruikshandleiding aangeeft, anders kan de aandrijfkast beschadigen.

912 304

Bild-Nr.: 912 308



$$1) V_{\max} = 25 \text{ km/h}$$

$$2) G_{AW} = \max. 1,25 \times G_{AS}; G_{AW \max} = 5t$$



- (D) Nur zulässig bei Anhängern mit Auflauf- oder Seilzugbremse.
- (F) Autorisé seulement sur remorque disposant de son propre système de freinage.
- (GB) Only permissible with trailers which are equipped with over-run or with Bowden cable brakes.
- (NL) Uitsluitend toegestaan bij aanhangers met oploop-of-kabel-trekrem.

912 308



Bild-Nr.: 912 312



(D)

1. Vorderachsentlastung des Schleppers beachten.
2. Rührfinger, Auslauföffnungen und Streuschaufeln sauber und funktionsfähig halten.

(F)

1. Veiller à la bonne adhérence de l'essieu avant.
2. Maintenir propres et opérationnels les agitateurs, les orifices d'alimentation et les aubes.

(GB)

1. Bear in mind front axle weight reduction.
2. Always keep agitator fingers, outlets and vanes clean and replace when worn or damaged.

(NL)

1. Op de vooras ontlasting van de traktor letten.
2. Roerdervingers, uitloop-openingen en strooischoepen schoon en bedrijfsgerreed houden.

912 312

Bild-Nr.: 912 336



(D)

- Zapfwelle nur bei niedriger Motordrehzahl einkuppeln.  
Bei Überlastung schert die Sicherungsschraube ab.  
Bei häufigem Abscheren Gelenkwelle mit Reibkupplung einsetzen.

(F)

- La prise de force ne doit être enclenchée qu'à régime moteur réduit.  
En cas de surcharge, la vis de sécurité se casse.  
En cas de cisaillement fréquent, utiliser une transmission avec limiteur de couple à friction.

(GB)

- Engage pto-shaft only at low engine speed.  
In case of overstrain the shear bolt shears off.  
If shear bolt shears off too frequently we recommend the use of a pto shaft with friction clutch.

(NL)

- Aftakas alleen bij laag motortoerental inkoppelen.  
Bij overbelasting breekt de breekbout af.  
Bij dikwijls breken een aftakas met slipkoppeling toepassen.

912 336



## 2.5 On receipt of the machine

On receipt of the machine check that no damage has been caused in transit and all parts are present, otherwise no responsibility can be accepted by us or the carrier. Check whether all parts listed in the delivery note are present. Any claim must be made within 3 days after receipt of machine.

Before commencing work, remove all packing material, wire, etc. and check that all lubrication points are well supplied with grease, oil, etc. before use (pto-shaft)!



**Do not reach with your hands into the fertiliser hopper! Danger of injury due to rotating agitator head!**

## 2.6 Declined use of the machine

The centrifugal broadcaster **AMAZONE ZA-F** has exclusively been designed for the usual operation in agriculture for spreading dry, granular, prilled and crystalline fertilisers as well as for seeds and slug pellets.

The machine is designed to spread on slopes of up to **20 %** inclination.

Any use beyond the one stipulated above is no longer considered as designed use. The manufacturer does not accept any responsibility for damage resulting from this; therefore the operator himself carries the full risk.

Under "designed use" also the adhering to the manufacturer's prescribed operation maintenance and repair conditions as well as the exclusive use of **original-AMAZONE-spare parts** is to be understood.

The centrifugal broadcaster **AMAZONE ZA-F** may only be operated, maintained and repaired by such persons who have been made acquainted with it and who have been advised about the dangers.

All applicable accident preventive advice as well as any further generally accepted safety-, working-, medical- and road-traffic rules and any safety advice on the machine's labels should be adhered to..

**Any damages resulting from arbitrary changes on the machine rule out the responsibility of the manufacturer.**

Though machines having been manufactured with great care certain deviations when spreading fertiliser cannot totally be excluded even at a designed use: These deviations may be caused e. g. by:

- Varying composition of fertiliser and seed (e. g. granule size distribution, specific density, granule shape, dressing, sealing).
- Drifting.



- 
- Blocking up or bridging (e. g. by foreign particles, bag residue, damp fertiliser etc.).
  - Undulated terrain.
  - Wear of wearing parts (e. g. spreading blades, seed metering wheels, V-belts. . .).
  - Damage by external influence.
  - Wrong drive-R.P.M. and travelling speed.
  - Fitting wrong spreading discs (e. g. mixing them up).
  - Wrong setting of the machine (incorrect mounting, not adhering to the spreading chart).

Therefore, check and ensure that your machine is functioning correctly and has sufficient spread accuracy before and during use.

Claims regarding damage not having occurred on the AMAZONE centrifugal broadcaster itself will be rejected. This also applies to damages due to spreading errors. Modifications made to the AMAZONE centrifugal broadcaster by the owner/user may result in damage and therefore the manufacturer does not accept liability for such damage.

---





### 3.0 General safety and accident preventive advice



**Basic principle:**

**Always check traffic and operational safety before putting the machine into any operation!**

1. Adhere to the general rules of health- and safety precautions as well as to the hints in this instruction manual!
2. The warning- and hint signes fixed to the machine give important hints for the operation without any danger. Adhering to them serves your safety!
3. When making use of public roads adhere to the applicable traffic rules!
4. Become acquainted with all devices and controlling elements as well with their function **before** beginning with the operation. Doing this during operation would be too late!
5. The clothing of the operator should not be loose. Avoid wearing loose clothing!
6. To avoid risk of fire keep the machine clean!
7. Before beginning to drive check your surrounding area for hazards (children). Ensure sufficient visibility!
8. Sitting or standing on the implement during operation or during transport is illegal.
9. Mount the implement only with the prescribed tools!
10. Special care should be taken when the implement is coupled to or uncoupled from the tractor.
11. When mounting or dismounting bring storing supports in correct position (otherwise danger of tipping over)!
12. Affix any ballast weights always as prescribed to the correct fixing points!
13. Check maximum permissible axle loads of the tractor (see vheicle documents)!
14. Do not exceed maximum permissible transport measurements of the traffic department!
15. Check and fit equipment for road transport, as e. g. traffic lights, warning plates and if required existant guards!



16. The release ropes for quick coupler should hang freely and in the low position must not release the quick coupling by themselves!
  17. Never leave tractor seat during driving!
  18. Stability, steering and braking performance are affected by mounted implements, trailers and ballast weights. Therefore, take account of these effects and allow sufficient steering and braking!
  19. When lifting the fertiliser broadcaster the front axle load of the tractor is relieved by different amounts depending on the size of the tractor. Always check that the necessary front axle load of the tractor (20 % of the tractor's net weight) is maintained!
  20. When driving into bends mind the projection to the sides and the sway of the implement!  
  
To avoid sideways sway of the spreader during operation stabilize the lower link arms of the three-point-hydraulic!
  21. Take implement only into operation when all guards are fixed in position!
  22. **Never stay or let anyone stay within the operational area! Danger by fertiliser particles being thrown around. Before starting to operate the spreading discs make sure that nobody is in the spreading zone. Do not approach rotating spinner discs.**
  23. Filling the fertiliser broadcaster may only be done with the tractor engine stopped, removed ignition key and closed shutters.
  24. Do not stay in the rotating- and swivelling range of the implement!
  25. Hydraulic folding parts may only be actuated when no one is within the movemeng range!
  26. On all hydraulically actuated pivoting parts there exists the danger of injury by bruising, cutting and trapping!
  27. Before leaving the tractor seat, lower the implement to the ground. Actuate the parking brakes, stop the engine and remove ignition key!
  28. No one should stay between tractor and implement if the tractor is not secured against rolling away by the parking brake and/or by chocks!
-



29. **Note maximum permissible filling loads! Bear in mind the fertiliser bulk density [kg/l]. The fertiliser bulk densities can be read off the spreading table and can be respectively determined.**

ZA-F 403	500 kg
ZA-F 604 R	800 kg
ZA-F 804 R, ZA-F 1004 R and ZA-F 1204 R	1200 kg

30. If a trailer hitch is provided it must only be used for towing suitable implements or twin axle trailers if:

- the maximum speed of **25 kph** is not exceeded,
- the trailer has a run-on brake or a brake which can be actuated from the tractor seat,
- the permissible total weight of the trailer is not more than **1.25 times** the permissible total weight of the tractor, however, **3 tons** in maximum.

**Single axle trailers must not be towed by tractor mounted machinery under any circumstances.**

31. Do not place any foreign objects inside the hopper!
32. During the calibration test watch out for danger zones due to rotating parts of the machine!
33. **Never park or move the fertiliser broadcaster with a filled hopper (danger of tipping over).**
34. If the implement is transported over longer distances with a filled hopper, close shutters and out of function (en route to the field), open the shutter slides entirely before starting the spreading operation, e. g. before engaging the pto-shaft. Then **slowly engage the pto-shaft** and execute a short spreading on the spot. Only now, after having set the shutters onto the desired spreading rate start spreading.
35. If spreading on field boundaries, by water or roads use the boundary spread deflector!
36. **Before any operation check perfect seat of fixing parts, especials for spreading disc- and spreading vane-fixing.**
37. When spreading super phosphate, marl lime and damp, granular fertilisers (no proper storing) remove the fertiliser sticking at the base of the hopper tips by means of the actuating rod after each emptying. Also remove the fertiliser sticking to spreading blades and deflector plates.



### **3.1 Tractor mounted implements**

1. Before mounting and dismounting implements to the three-point-linkage bring all control levers into such a position that unintended actuation is impossible!
2. When fitting to the three-point linkage the mounting categories on the tractor and the implement must coincide!
3. Within the range of the three-point linkage danger of bruizing and shearing!
4. When actuating the control levers for the three-point linkage never step between tractor and implement!
5. In transport position always take care for sufficient lateral movement to allow locking of the tractor's three-point linkage!
6. When driving on public roads with lifted implement the control lever has to be locked against unintended lowering!
7. Mount and dismount implements as prescribed. Check braking systems for function. Mind manufacturer's advice!
8. Working implements should only be transported and used on tractors which are designed to do this.

### **3.2 Universal joint shaft (pto-shaft)**

1. Use only pto shafts which are designed for the implement and which are equipped with all legally requested guards!
  2. Guard tubes and cones of the pto shaft as well as a tractor and implement pto guard must be fitted and kept in the correct place!
  3. Note the prescribed pto-shaft tube guards in transport- and operating position (refer to operation instruction of the pto shaft manufacturer).
  4. Mounting and dismounting pto shaft only with disengaged pto shaft, stopped motor and removed ignition key!
  5. Always care for correct fitting and securing of pto shaft!
  6. Prevent pto guard from spinning by fixing with the provided chain.
-





7. Before engaging the pto shaft ensure that the chosen pto-speed of the tractor corresponds to the implement input speed. Usually the pto shaft speed is 540 R.P.M. (please refer to details in the spreading chart).
8. Slow engagement of the pto shaft protects tractor and spreader.
9. When using the ground speed related pto shaft note that the speed is related to the forward speed and that the direction of rotation reverses when backing up.
10. Before switching on the pto shaft nobody is allowed to stay in the area of the spinning pto-shaft!
11. Never switch on the tractor pto while the engine is stopped!
12. When operating with the pto shaft nobody is allowed to stay in the area of the spinning pto-shaft!
13. Always switch off pto shaft when it is in an adverse position or not needed. Switch off pto shaft as soon as the machine's outlet openings have been shut off.
14. Attention! After switching off the pto shaft the mounted implement may still continue to run by its dynamic mass.  
  
During this period never come too close to the implement. Begin work only after the implement has come to a full standstill.
15. Clean and grease the universal joint shaft and the pto-driven implement only after the pto shaft and engine have been stopped and ignition key removed.
16. Stow the removed pto shaft on the stowage bracket provided!
17. After removal of the pto shaft replace protective cap over the tractor's pto.
18. Remedy of damages is to be undertaken before starting to operate with the implement.

### **3.3 Hydraulic system**

1. The hydraulic system is under high pressure!
2. When connecting hydraulic rams the prescribed connection of the hydraulic hoses has to be noted!



3. When connecting the hydraulic hoses to the tractor's hydraulic take care that the hydraulic is pressureless as well on the tractor- as on the implement side!
4. At hydraulic function connections between tractor and implement, the sockets and plugs should be colour coded in order to avoid incorrect operation. If a connection is made incorrectly reverse operation may result. **Danger of accident!**
5. Regularly check hydraulic hoses and exchange in case of damage or aging. The replacement hoses have to correspond to the technical demands of the implement manufacturer!
6. When searching for leaks appropriate aids should be used due to danger of injury!
7. Liquids (hydraulic oil) penetrating under high pressure may penetrate the skin and cause severe injuries. In case of injuries immediately see a doctor. Danger of infection!
8. Before starting to do any repair work on the hydraulic system, lower implement, relieve system from pressure and switch off the engine!
9. The period of use of any hose circuit should not exceed six years including a possible storing period of two years is maximum. Even when stored and used properly, hoses and hose circuits age. Therefore, their longevity and period of use is limited. Deviations from the above may be accepted depending on the experience made and the danger potential. For hoses and hose circuits made of thermoplastics other guide lines may prevail.

### **3.4 General safety and accident prevention advice for maintenance, repair and cleaning**

1. Repair, maintenance- and cleaning operations as well as remedy of function faults should principally be conducted with a stopped drive and engine. Remove ignition key!
  2. Check nuts and bolts regularly (for the first time after 3- 4 hopper fillings) for tightness and retighten if necessary!
  3. When carrying out maintenance work on the lifted implement make sure that it is secured by proper supports!
  4. Dispose of oil, grease and filters in the appropriate manner!
  5. Before doing any repair work on the electrics disconnect the power supply!
-



- 
6. Before conducting electric welding operations on tractor or on the mounted implement, remove cable from the generator and battery.
  7. Any spare parts fitted must, meet with the implement manufacturers' fixed technical standards. This is, for example, ensured by using original **AMAZONE** spare parts.
-

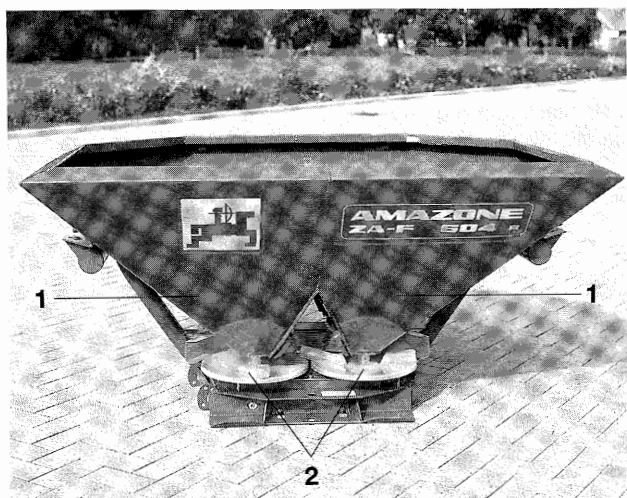


Fig. 4.1

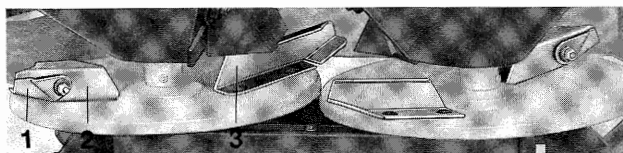


Fig. 4.2

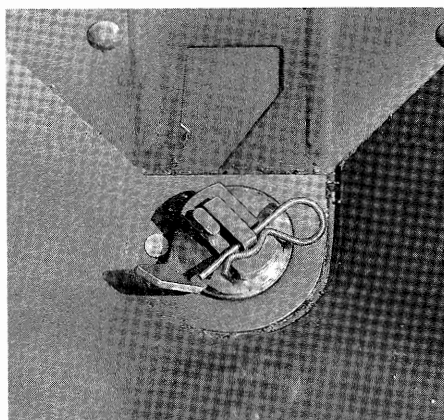


Fig. 4.3

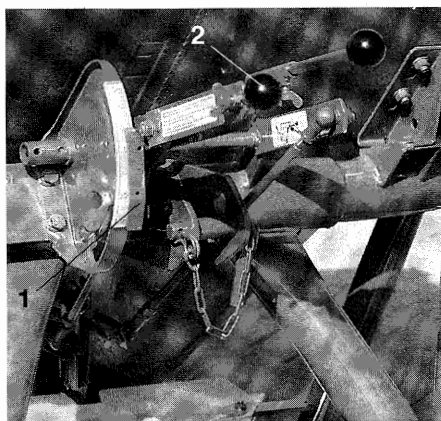


Fig. 4.4



## 4.0 Centrifugal broadcaster **AMAZONE ZA-F**

The centrifugal broadcaster **AMAZONE ZA-F** with its two hopper tips (4.1/1) and the two spreading discs (4.1/2) is equipped as standard with swivel blades for late top dressing (4.2/1). These spreading discs are driven contrary to the operating direction rotating adverse from inside to outside and are equipped with a short (4.2/2) and a long spreading blade (4.2/3).

**Agitator heads** (4.3/1) in the hopper bottoms provide an even fertiliser flow onto the spreading discs.

The **spread rate setting** is done by the stop (4.4/1) for the actuating levers (4.4/2) of the shutter slides according to the data given in the **ZA-F setting chart**. As the fertiliser spreading properties may vary considerably, it is recommended to check the required shutter position for the desired spread rate with the calibration device (option).

Setting the various **working widths** between **6** and **15 m** - depending on the relevant kind of fertiliser - is done by different **mounting heights** of the broadcaster on the tractor according to the data given in the **ZA-F setting chart**.

If the 1st tramline is exactly on the field's boundary, the boundary spread deflector (option) is used for one-sided broadcasting at the field's boundary.

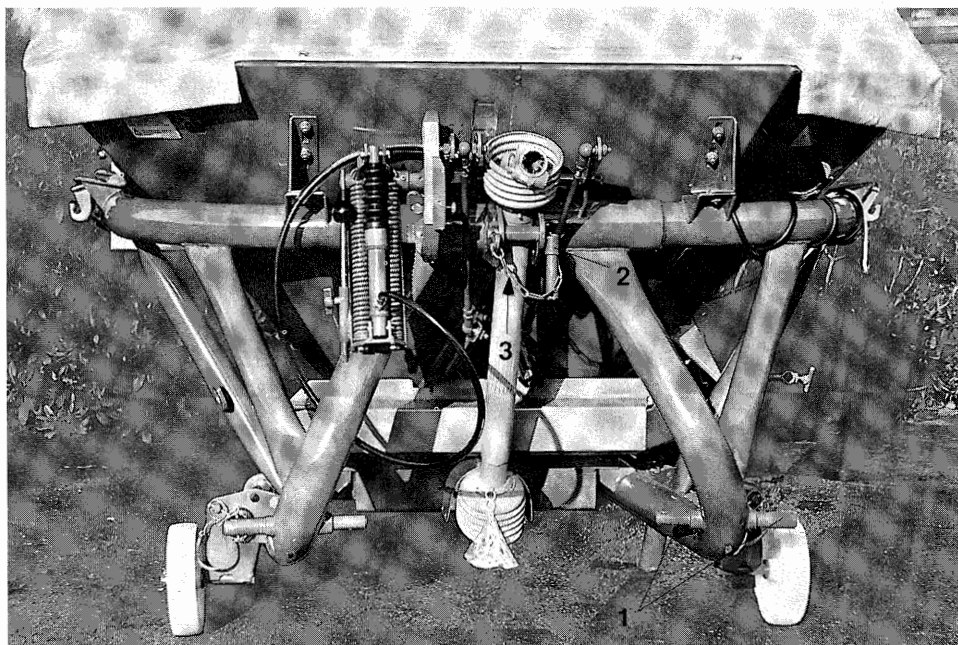


Fig. 5.1



## 5.0 Mounting

Mount your centrifugal broadcaster to the rear hydraulic three-point linkage of the tractor (hereto please note para 3.1). Fix lower link of tractor on lower link pin (cat. I or cat. II) (5.1/1) and secure with clip pin. (Kat. I oder II) (5.1/1) . Fix upper link with pin (cat. I or II) (5.1/2) and secure.



**Ask people to leave the danger area behind or underneath the machine, as it may swing to the rear if the upper link halves erroneously are part or tear off.**



**The speed of lowering a filled broadcaster must never be faster than 2 seconds. If available set the throttle valve accordingly.**

In the lifted position the lower link arms of the tractor must only have a little play to the sides, so that the machine does not swing to and fro during spreading operation. Secure lower link arms of the tractor with stabilising bars or chains.

## 5.1 Pto-shaft



**Only use the pto-shaft recommended by the manufacturer.**

**Standard Walterscheid-pto-shaft W2100-SC05-710  
(ZA-F 403 Walterscheid pto-shaft W2100-SC05-560)**

### 5.1.1 Fitting and matching the pto-shaft

#### Fitting the pto-shaft



**Before fitting to input shaft clean drive input shaft on the machine and apply grease to the pto shaft!**

- Slacken tapered grease nipples into the connecting yoke of the pto shaft.
- Push the connecting yoke of the pto-shaft onto the drive input shaft.
- Connect yoke flange and flange for the gear box input shaft with a shear bolt.
- Tighten tapered grease nipples.

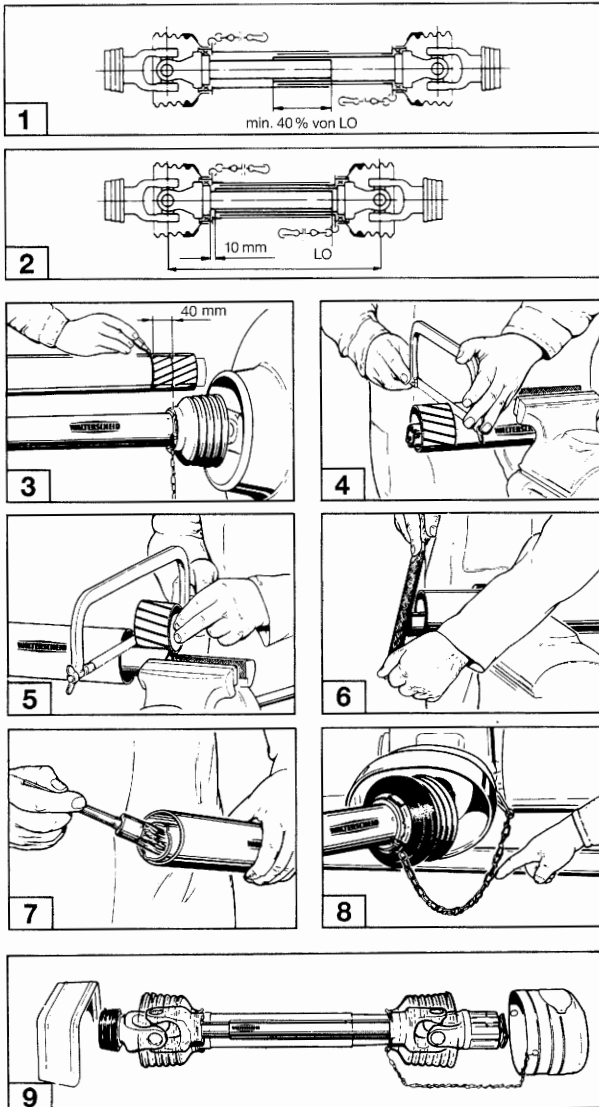


Fig. 5.2





### Matching the pto shaft when fitted for the first time.



**When fitting for the first time, match pto shaft to tractor according to Fig. 5.2. As matching only applies to one type of tractor, check pto-shaft matching when changing tractors.**

When first mounting fix other pto shaft half to the universal joint shaft profile of the tractor without inserting the pto-shaft tubes into one another.

1. By holding the two pto shaft tubes side by side, check whether an overlap of the pto shaft tubes of at **least 40 % of LO** (LO = length in inserted condition) is guaranteed.
  2. In inserted position the pto shaft tubes may not touch the yokes of the universal joint. A safety margin of at least 10 mm should be attained.
  3. For matching the length of the pto shaft halves hold them side by side in the closest operating position of the machine and mark.
  4. Shorten inner and outer guard tube by the same amount.
  5. Shorten inner and outer profile tube in the same length as guard tube.
  6. Deburr cutting edges and carefully remove chips.
  7. Apply grease to the profile tubes and insert.
  8. Hook in chains into the hole of the bracing of the upper link pocket so that a sufficient swivel range of the pto shaft in all operating positions is guaranteed and the pto shaft guard is prevented from rotating during operation.
  9. Only operate with entirely guarded drive.
- On tractor and implement only use pto shaft with complete guard and additional guard. Replace guards immediately if they have been damaged.



**The maximum pto shaft angle must never exceed 25 degrees.**

**Also note the fitting- and maintenance advice of the pto-shaft manufacturer attached to the pto shaft!**



**To avoid damages only engage pto shaft slowly at low tractor engine speed (idling)!**

When parking the fertiliser spreader, the pto-shaft should be placed into catching hooks provided (5.1/3).



## 6.0 On route to the field - Transport on public roads

When moving the broadcaster mounted to a tractor on public roads, observe the traffic regulations in force in your country. According to the harmonised European traffic regulations traffic light units and warning plates (red/white) are required on agricultural and forestry implements mounted to tractors. Vehicle owner as well as the operator are responsible for adhering to the legal traffic regulations (slight national differences may be possible). In general they are:

- If the prescribed rear lights, the direction blinkers or the registration No. of the tractor are hidden by the broadcaster (or other implement) they will have to be repeated on the mounted implement. If the sides of the mounted implements protrude more than 400 mm the outer edge of the light emitting source of the limiting or tail lights of the tractor, extra parking warning plates and limiting lights are required. If the mounted implement protrudes more than 1 m beyond the tail lights of the tractor, parking warning plates, rear light units and rear reflectors are required. The light units and parking warning plates can be obtained from your dealer. As always the latest edition of the national traffic regulations is valid, please verify them at your local traffic office (please also refer to para. 10).
- Lift the tractor mounted broadcaster only so far that the upper edge of the rear lights is at a maximum 900 mm above the road.
- Check traffic light kit for proper function.
- **Note maximum permissible filling loads (please also refer to para. 3.0 item 29) and axle loads of tractor; if necessary drive on public roads with only half filled hopper.**



**When lifting the fertiliser broadcaster the front axle load of the tractor is relieved by different amounts depending on the size of the tractor. Always check that the necessary front axle load of the tractor (20 % of the tractor's net weight) is maintained!**

- The towing hitch of the centrifugal broadcaster must only be used for **towing** implements or twin axle trailers if:
  - the maximum speed of **25 kph** is not exceeded.
  - the trailer has a run-on brake or a brake which can be actuated by the tractor operator.
  - the permissible total weight of the trailer is not more than **1.25** times the permissible total weight of the tractor, however **5 tons** is maximum.



**Single axle trailers may not be towed under any circumstances.**



- The transport width of 3 m may not be exceeded, e.g. with the row spreading attachment (option) for maize fertilising.



**When driving on public roads with lifted implement the control lever has to be locked against unintended lowering.**



**On broadcasters with hydraulic shutter control, the shutting of the block ball taps prevents self-opening of the shutter slide in case of leaking control valves and/or longer pauses, e. g. transport.**

Please adhere to this advice. They help to prevent accidents on the public highway.

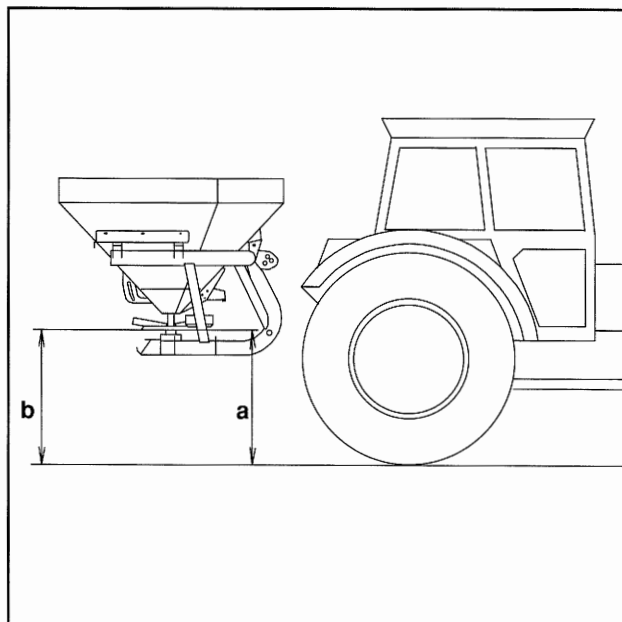


Fig. 7.1



## 7.0 Setting and use of the fertiliser broadcaster

For all settings on your centrifugal broadcaster **AMAZONE ZA-F** follow the indications of the **setting chart**.

All common fertilisers are test-spread in the **AMAZONE**-test hall and the setting figures are entered into the setting chart. All fertilisers mentioned in the setting chart were in excellent condition when determining the setting values.

Due to varying fertiliser characteristics because of weather influence and/or unfavourable storing conditions, deviations of the physical properties of the fertiliser (also within the same kind and brand) may occur and the spreading behaviour of the fertiliser may change and thus deviations from the figures for setting the desired spread rate or working width in the setting chart may become necessary. No guarantee can be given that your fertiliser - even with the same name and from the same manufacturer - has the same spreading behaviour as the fertiliser tested by us.



The figures in the setting chart can only be taken as standard. Therefore, always conduct a spread rate check.



With unknown kinds of fertiliser or for checking the working width, you will require the mobile test kit (option para. 10.18).

### 7.1 Setting the working width (mounting height)



When setting the working width (mounting height) advise people to leave the danger zone behind or underneath the machine.

The different working widths are achieved - depending on the kind of fertiliser - by different mounting heights (angling) of the spreader. Set the mounting height of the filled broadcaster in the field exactly according to the figures given in the setting chart. **Measure the distance between the soil surface and the spreading disc front- (a) and rear (b) (Fig. 7.1).**

**Normally** the working width is increased by **angling** the broadcaster **at the rear** (spacing measurement **a** is smaller than **b**) (by shortening the top link). If this measure is not sufficient remove the upper part of the agitator head and insert the clip pin in reverse sense of rotation, if necessary also swivel swivel blades upwards (to do this, please observe the special hints in the setting chart).

**Normally** the working width is **decreased by angling** the broadcaster at the rear (spacing measurement **a** is bigger than **b**) (by extending the top link).

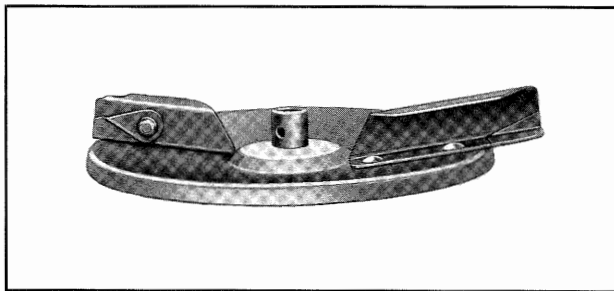


Fig. 7.2

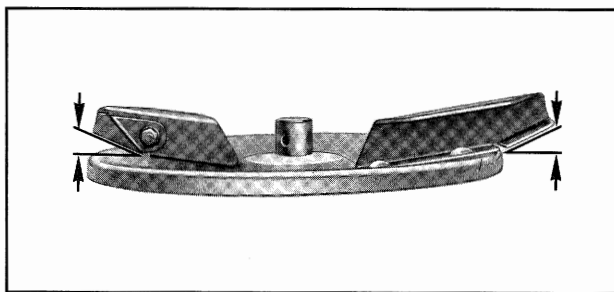


Fig. 7.3

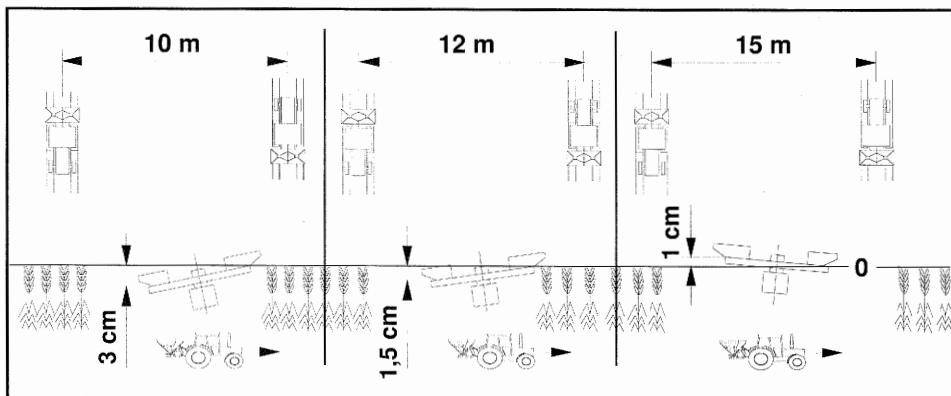


Fig. 7.4

**Example:**

Kind of fertiliser: CAN 27 % N, BASF  
 Desired working width: 12 m

Mounting height depending on kind of fertiliser and working width from setting chart: **80/83**

Kind of fertiliser	Working widths in relation to the mounting height a/b					
	7 m a/b	9 m a/b	10 m a/b	12 m a/b	15 m a/b	Qty. see page
CAN 27 % N, BASF NP- and NPK-types BASF NPK 15-15-15 prilled, ø 3,65 mm Agrolinz			80/81	80/83	80/87	17

**Excerpt from the setting chart**

### 7.1.1 Normal fertilising

The indicated mounting heights (in cm) are valid for normal fertilising. **For normal fertilising the swivel blades of the spreading discs are normally in the lowered position** (Fig. 7.2) (Please adhere to advice in the setting chart).

For the spring spreading season, when the crop has grown up to a height of **10-40 cm**, one half of the crop height should be added to the stated mounting heights (**e.g. 80/80**). Thus, set a **mounting height of 95/95 when the crop is 30 cm tall**. If the crop stands taller follow the instructions for late top dressing (para. 7.1.2). If the crop is very dense (rape) the fertiliser broadcaster should be set at 80/80 above the crop. If that is no longer possible, please also follow the instructions for late top dressing (para. 7.1.2.).

### 7.1.2 Late top dressing

**For late top dressing swivel the swivel blades of the spreading vanes into the uppermost position (Fig. 7.3) without slackening the nuts (without tools). Hereby the fertiliser spread pattern is raised.**

Set the mounting height of the spreader with the aid of the tractor's three-point-linkage so that the spreading discs are at the same height as the top of the grain (position 0) (Fig. 7.4). **The broadcaster anglings have to be set (Fig. 7.4) depending on the desired working width.** If the lifting height of the tractors' hydraulics is not sufficient (crop taller than 0.9 - 1.0 m), a crop deflector (option) is required which presses the grain downwards within the spreading disc area.



**In case the pto-shaft universal joint exceeds angles of 25° use a wide angle pto shaft (option).**

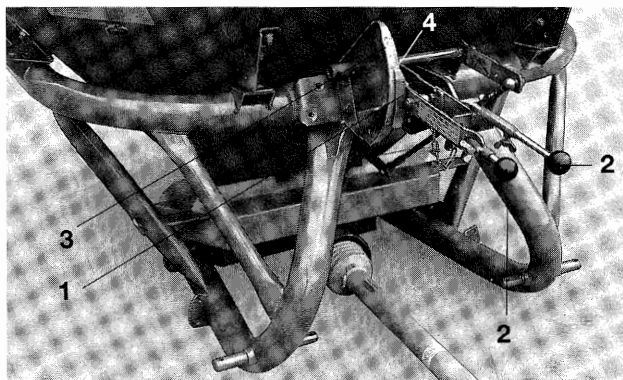


Fig. 7.5

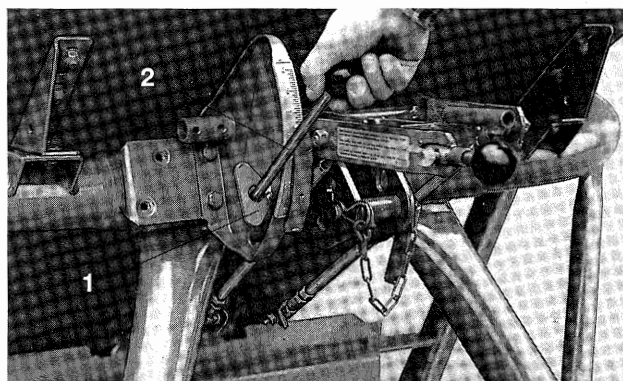


Fig. 7.6





## 7.2 Setting the spread rate

**Set the spread rate only with closed shutters and block ball taps (hydraulic shutter control) .**

The **spread rate setting** is done by adjusting the stop (7.5/1) for the setting levers (7.5/2) of the shutter openings along the scale (7.5/3). With the levers different opening diameters of the shutter openings can be set. The necessary shutter position is determined either **with** the aid of the **setting chart** (standard execution) or **without** setting chart by means of the calibration kit (special option).



**When spreading only open the shutters after the prescribed pto shaft speed of 540 R.P.M. is reached.**

### 7.2.1 With setting chart (standard execution)

Take the shutter position directly from the setting chart under consideration of the kind of fertiliser to be spread, working width, intended speed of operation and desired spread rate.

**Set the required shutter position with the stop (7.5/1) as follows:**

- Slacken clamping bolt (7.6/1) with actuating rod (7.6/2).
- Set the read off edge (7.5/4) of the stop on the scale (7.5/3) onto the shutter position taken from the setting chart.
- Retighten clamping bolt.

**Example:**

Kind of fertiliser:	can 27 % BASF (white)
Working width:	12 m
Speed of operation:	8 km/h
Desired spread rate:	50 kg/ha

For the spread rate **246 kg/ha** read off the required shutter position: **"12"**.

- Set shutter position via stop for setting levers onto the scale figure **"12"** as discribed.



**The setting figures of the setting chart may only be considered as standard data as spreading properties of the fertilisers may vary and thus may cause changes at the spread rates to be set. Therefore, it is recommended to check the required shutter position for the desired spread rate with the aid of the calibration device (option).**

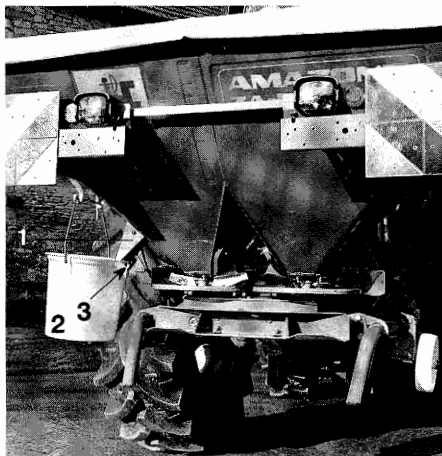


Fig. 7.7



Fig. 7.8

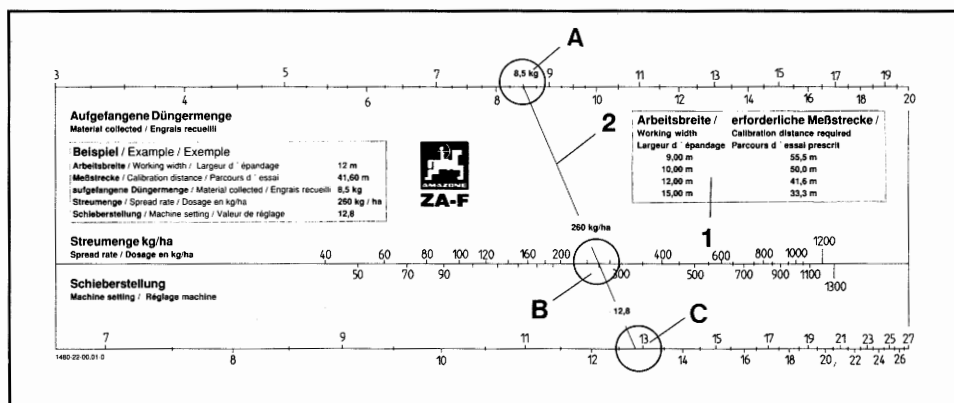


Fig. 7.9

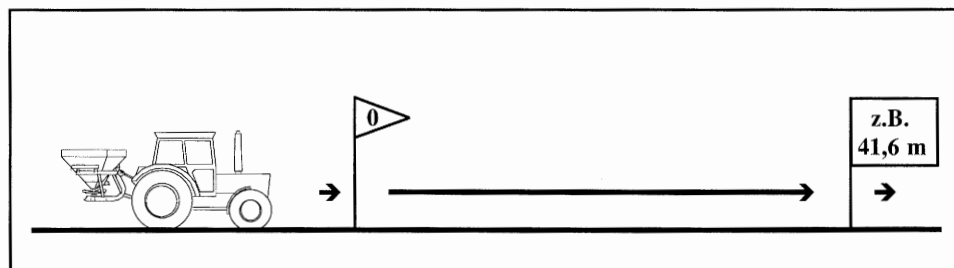


Fig. 7.10



### 7.2.2 Without setting chart with the calibration device (option)

With the calibration device (7.7/1) the shutter position for the desired spread rate is determined **without setting chart** with the aid of a **nomogram slide rule**. Here the varying spreading properties of the fertilisers are considered when determining the shutter position.

**Determine shutter position as follows:**

**Example:**

Desired working width:	12 m
Desired spread rate:	260 kg/ha
Intended speed of operation:	8 km/h



**When determining the shutter position both shutters remain closed and the pto shaft is disengaged.**

- Hang calibration bucket (7.7/2) by its handle into the frame. Attach calibration bucket by means of the clamping device (7.7/3).
- Open completely side shutter (7.8/1) of the outlet chute for approx. 5 sec. with the rope (7.8/2) (in order to guarantee an even fertiliser flow). Thereafter pour back the collected fertiliser into the hopper of your broadcaster.
- Read the required test distance (**41.6 m**) for the desired working width (**12 m**) off the table (7.9/1) of the nomogram slide rule (Fig. 7.9). Measure test distance thoroughly in the field. Mark beginning and end of the test distance.
- **Carefully drive test distance from beginning- to end-mark under field conditions, e.g. with the intended constant speed of operation (Fig. 7.10). Open completely the side shutter of the outlet chute with the rope exactly at the beginning mark of the test distance (pull until stop) and shut at the end-mark.**
- Weight fertiliser collected in the collecting bucket. When driving along the test distance (**41,6m**) with a constant speed of operation (**8km/h**) the collected fertiliser is: **8,5 kg**.

**The nomogram slide rule consists of:**

1. An upper scale "**A**" for the fertiliser quantity of between "3 and 20" kgs collected during the spread rate check.
  2. A centre scale "**B**" for the desired spread rate of between "40 and 1300" kg/ha.
  3. A lower scale "**C**" for the shutter position of "7 up to 27".
- For the collected fertiliser (**8,5 kg**) read off figure on upper scale (7.9/A) and for the desired spread rate (**260 kg/ha**) read off figure on centre scale (7.9/B). Draw a straight line (7.9/2) through both points (e. g. with a straight edge). The prolongation of the tie line shows the required shutter position "**12.8**" on the lower scale (7.9/C).



Fig. 7.11

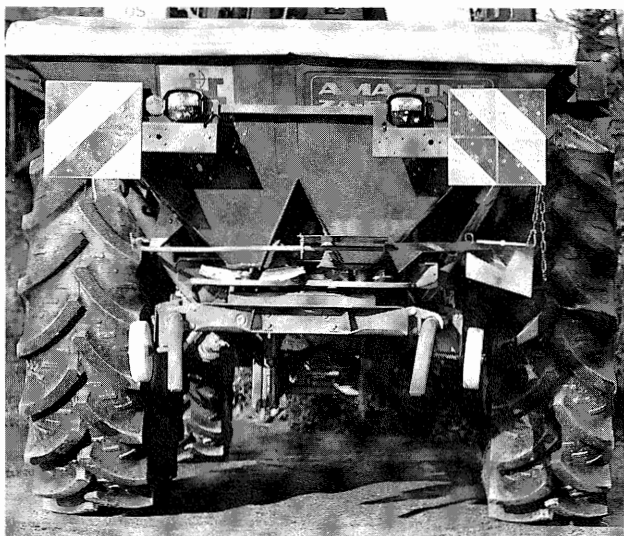


Fig. 7.12



### **7.3 Half sided boundary spreading with border spread deflector (option) (tramline centre 1,5 up to 2,0 m from the field's border)**

If the first tramline has been placed in the first working bout of the seed drill (Fig. 7.11) (with a 3 m seed drill the distance of the first tramline to the field's border is 1.5 m) one has to operate with the lowered border spread deflector (7.11/1) and simultaneous shutting the corresponding shutter (see illustration at the left hand side). The border spread deflector can be used at random for the right hand- and left hand boundary spreading.

Fig. 7.11 Operational position

Fig. 7.12 None operating position

Thus the fertiliser is only thrown 1.5 to 2 m towards the field's boundary.

To do this pull out the right hand actuation rod (seen in direction of travel), both setting levers can be individually controlled and both shutters can be opened and closed independently from each other.

If longer field strips have to be spread "one sided", remove the extension of the agitator head of the none operating hopper tip or cover it with the hopper insert (special option).

If the machine is provided with an agitator head disengagement (special option) the relevant agitator head on the closed side underneath, the hopper tip has to be disengaged by pulling the coupling plug.



## 7.4 Hints for special setting chart

### 7.4.1 Hints for spreading slug pellets (e.g. Mesurol)

1. As standard the centrifugal broadcaster **AMAZONE ZA-F** can also be used for wide spreading of slug pellets. Slug pellets (e.g. Mesurol) has a granular shape or similar and is spread in relatively small rates (e.g. 3 kg/ha).

2. When filling the centrifugal broadcaster avoid inhaling the dust and direct contact with your hands (wear protective gloves). After application clean your hands and all parts of the skin that having been in contact with the dust, thoroughly with soap and water.

In general regarding handling slug pellets, we refer to the advice of the manufacturer and to the general protective measures for handling pesticides (code of practice by the health and safety board).

3. When spreading slug pellets take care, that the agitator heads are always covered with spreading material and that the pto shaft is constantly driven with a speed of **540 R.P.M.** A residue of approx. 3 kg cannot be spread. For emptying the spreader open the shutter and collect spreading material dropping out on a canvass.

4. Slug pellets **must not** be mixed with fertiliser or other materials in order to possibly work with the spreader in another setting range.

5. The settings of the spreader have to be taken from the setting chart for seeds and slug pellets. These figures may only be considered as guide values. Before starting to operate conduct a **stationary spread rate check**.

#### Example:

Working width:	10 m
Speed of operation:	8 km/h
Desired spread rate:	3 kg/ha

#### Preparation for spread rate control

- Remove spreading vanes from both spreading discs.
- Place canvas around the rear part of the fertiliser broadcaster.
- Take shutter slide position directly from the setting chart and consider the intended working width, operation speed and desired spread rate. Indicated in the spread rate table are the **spread rate of 3,2 kg/ha** and the **shutter position of 6,0**.
- Set read off edge of the stop slightly beneath the scale value **6,0**.
- From the following table determine the time for the intended working width and operational speed which is necessary to spread an area of **0.5 ha**. For the given example the time is **3 min. 45 sec**.



working width [m]	speed of operation [km/h]	required time for spreading 0,5 ha [min. and sec.]
6	6	8 min. 20 sec.
6	8	6 min. 15 sec.
6	10	5 min. 00 sec.
6	12	4 min. 10 sec.
6	14	3 min. 34 sec.
10	6	5 min. 00 sec.
10	8	3 min. 45 sec.
10	10	3 min. 00 sec.
10	12	2 min. 30 sec.
10	14	2 min. 8,5 sec.
12	6	4 min. 10 sec.
12	8	3 min. 7,5 sec.
12	10	2 min. 30 sec.
12	12	2 min. 5 sec.
12	14	1 min. 47 sec.

### Spread rate control

- Drive the pto shaft with **540 R.P.M.**
- Open both shutters for **3 min. 45 sec.** exactly.
- Weigh collected spreading material [kg] (for 0,5 ha) e.g. 1,5 kgs.
- Convert collected spreading material [kg] to spread rate [kg/ha].

**Converted spreading material [kg/0,5ha] x 2 = spread rate [kg/ha]**

$$1,5 \text{ kg}/0,5\text{ha} \times 2 = 3 \text{ kg/ha}$$

- In case of deviations correct shutter position and repeat spread rate control.

### 7.4.2 Hints for spreading oil seeds

Before spreading oil seeds in spread rates of less than 50 kg/ha, we also recommend a spread rate control as described in para. 7.4.1.



## 8.0 Special advice for operation

1. Note max. payload! (Please refer to para. 3.0, item 29).
  2. Engage pto shaft only at slow tractor engine speed.
  3. Thetowing hitch must only be used for towing implements or twin axle trailers if:
    - the maximum speed of **25 kph** is not exceeded,,
    - the trailer has a run-on-brake or a brake which can be actuated from the tractor operator,
    - the permissible total weight of the trailer is not more than **1,25** times the permissible total weight of the tractor, however, **5 tons** in maximum.
  4. When lifting the fertiliser broadcaster the front axle load of the tractor is relieved. Always check that the necessary front axle load of the tractor is maintained (**20 %** of the tractor's net weight).
  5. **Do not approach rotating spinner discs! Danger of injury! Danger by fertiliser particles being thrown around. Advise people to leave the danger area!**
  6. After **3-4** hopper fillings check nuts and bolts regularly for tightness and retighten if necessary!
  7. At some spreading materials as Kieserite, Excello-granules and magnesium sulphate an increased wear on the spreading blades may occur.
  8. In case of leaking control valve and/or longer periods of standstill, e.g. during road transport, shutting the lock taps prevents the closed shutters from opening by themselves (at hydraulic shutter control).
  9. **Open shutter only when prescribed pto shaft speed (e.g. 540 R.P.M.) has been reached.**
  10. Maintain constant pto speed and driving speed for best performance..
  11. **If the implement is transported over longer distances with filled hopper and has closed shutters (on route to the field), open the shutter slides entirely before starting the spreading operation, i.e. before engaging the pto-shaft. Then slowly engage the pto-shaft and carry out a brief spreading. Only now, after having set the shutters onto the desired spreading rate, start spreading.**
  12. When spreading super phosphate, marl lime and moist, grained fertilisers (inappropriate storing) remove fertiliser ring possibly sticking to the hopper tips after every emptying. Also remove fertiliser sticking to spreading vanes and guide plates.
-





13. If in spite of an equal shutter position an uneven emptying of the two hopper halves is noted, check the main shutter position (please refer to para. 9.0 item 6).
14. By use of the folding sieve against foreign objects (option), e. g. stones, hard earth clods and fertiliser clods or plant residues are sieved out.
15. The agitator heads (Fig. 8.1) rotating in reverse direction in the hopper provide an even fertiliser flow onto the spreading discs. With some spreading materials, e. g. some kinds of urea or green manure seed the extension (8.1/1) has to be taken off the agitator head and the clip pin has to be inserted in reverse rotation (Fig. 8.2) (Note hints in the setting chart).

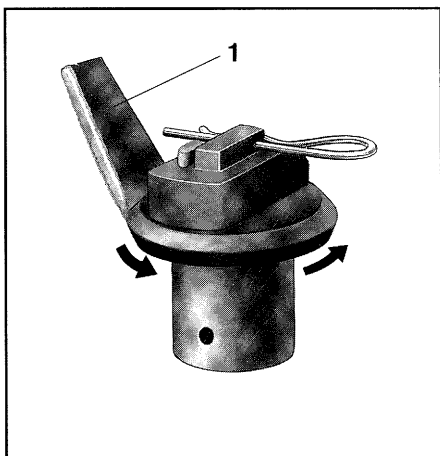


Fig. 8.1

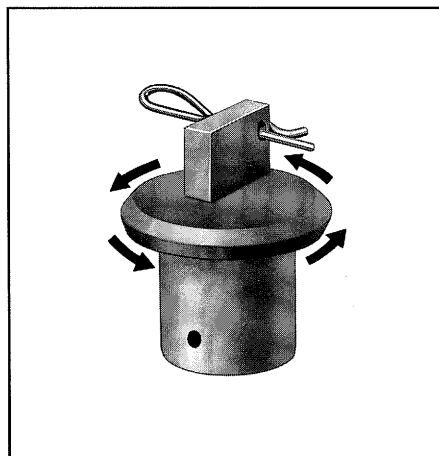


Fig. 8.2

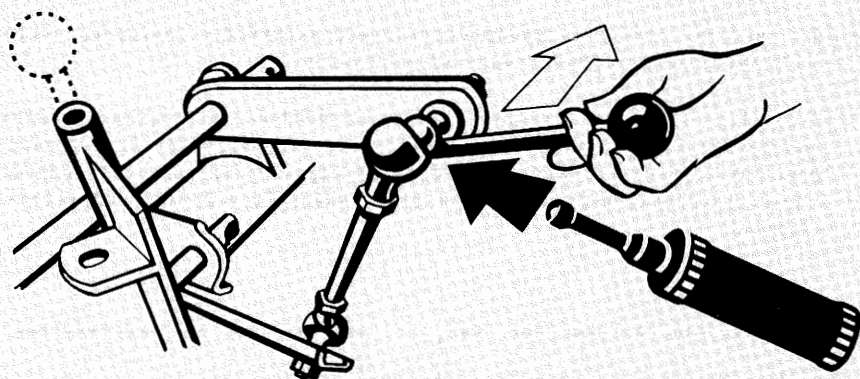


Fig. 9.1

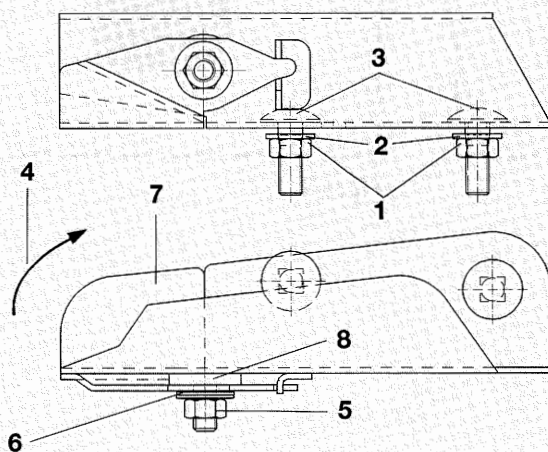


Fig. 9.2



## 9.0 Cleaning, maintenance and repair



**Clean, grease or set your centrifugal broadcaster of the universal joint shaft only after the pto shaft and engine have been stopped and ignition key is removed.**



**After disengaging the pto shaft the mounted implement may still continue to run by its dynamic mass. Begin work only when the implement has come to rest.**



**Grease shutter guides after every operation!**

1. After use clean the machine with a normal jet of water. Treat dry machine with an anticorrosive agent. Park machine with **opened** shutters.



**Also grease the threads of the T-bolts for the shutter lever locking as well as their washers, so that the clamping connection remains functioning.**

2. At certain intervals slacken **ball joints** of the shutter linkage (Fig. 9.1) (with the aid of the actuating rod), **clean** and **grease!**
3. When parking the machine deposit the pto shaft in the catching hook.
4. **The technical condition of the spreading vanes including the swivel blades essentially influences the even lateral fertiliser distribution in the field (creation of stripes).** The spreading vanes have been manufactured from especially wear resistant and non corrosive steel. However, it is indicated that the spreading vanes and their swivel blades are wearing parts. Exchange spreading blades as soon as breakages by wear are noticeable. Exchange swivel blades as soon as in the upper range a slit is noted. The longevity of the spreading vanes and swivel blades depends on the kinds of fertiliser used, operation times and quantities spread.

### Exchange of spreading vanes

- Slacken the relevant self locking nut (9.2/1).
- Remove washer (9.2/2) and flat mushroom head bolt (9.2/3).
- Fitting the spreading vanes is done in reverse order.
- Tighten firmly the self locking nuts (9.2/1).



**Note the correct fitting of the spreading vanes. The open side of the U-shaped spreading vane shows direction of rotation (9.2/4).**



**The short vane has to be fitted next to the hole drilled into the spreading disc's edge.**

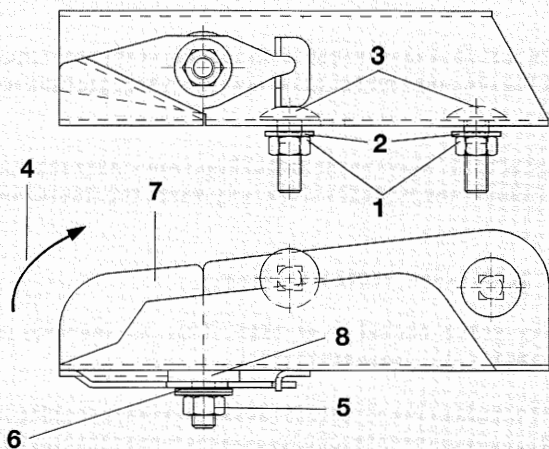


Fig. 9.2

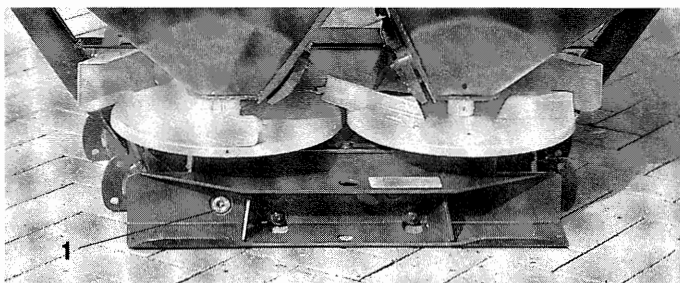


Fig. 9.3

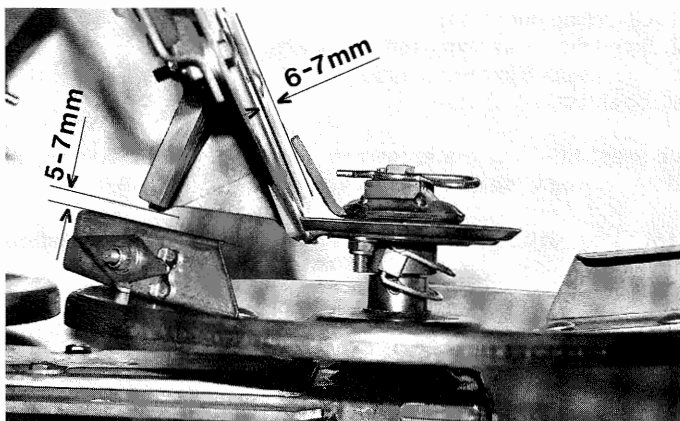


Fig. 9.4



## Exchange of swivel blades

- Slacken self locking (brass CuZn) nut and remove together with spring washers.
- Exchange swivel blade (9.2/7).



**Mind plastic washer (9.2/8) between spreading vane and swivel blade.**

- Heap up spring washers reciprocally (do not stack).
  - Retighten self locking nut (9.2/5) with a torque of 6 - 7 Nm, so that the swivel blade can still be swivelled upwards by hand, however, does not swivel up by itself during operation.
5. Under normal operation conditions the gearbox is maintenance-free. **The oil level has to be visible in the "sight gauge" (Fig. 9.3/1).** A refilling of oil normally is not necessary. External symptoms, e. g. fresh oil spots on the parking place or on machine parts and/or loud noise development, however, indicate an oil leakage at the gearbox housing. Search for reason, care for remedy and fill with oil.

**Oil type and quantity: 1,6 l SAE 90 gear oil**

## Dismantling and fitting the gearbox

- Remove agitator heads (please refer to para. 9 item 11).
- Slacken fixing bolts for gearbox and dismantle deflector plate.
- Take out gearbox.
- Remove spreading discs (preferably with AMAZONE pulling device) and mark right hand and left hand spreading disc.
- Fit agitator heads.
- Check bolting measures of deflector pocket.

### 6. Check regularly the spacings according to Fig. 9.4:

**Spacing (6-7mm)** between hopper wall and agitator finger! If necessary, bend agitator finger tip. Exchange agitator heads worn too much.

**Spacing (5-7mm)** between spreading vane and deflector chute. In case of deviations from the spacing measure, displace deflector chutes after having slackened the fixing bolts.

7. The separately provided bolts 8 x 30, DIN 931, 5.6 are exchange shear bolts for fixing the pto shaft yoke on the flange of the gearbox input shaft. Always apply grease when pushing the pto shaft onto the gearbox input shaft.

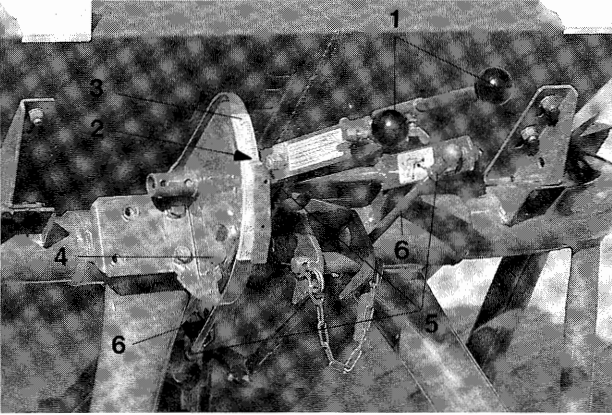


Fig. 9.5

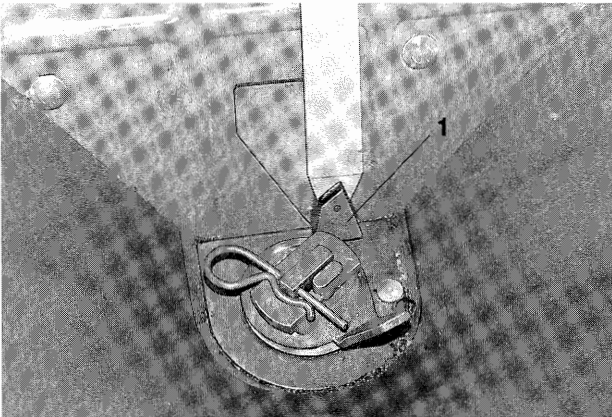


Fig. 9.6

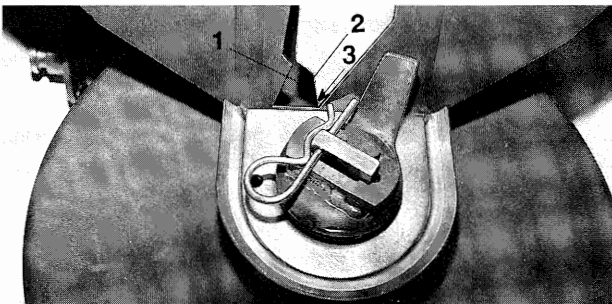


Fig. 9.7



## 8. Checking the basic setting of the shutter slides

If at equal shutter slide position an uneven emptying of the two hopper halves is noticed, individually check the basic setting of the shutter slides as follows:



**When actuating the shutters do not reach into the hopper outlet opening!  
Danger of bruising!**

- Close shutter slides via setting levers (9.5/1).
- Set pointer reading line (9.5/2) of setting lever to setting value "11" of the scale (9.5/3) and lock with thumb nut (9.5/4).
- Open the shutter slides by swivelling the setting levers until stop.
- Now, the setting gauge (9.6/1) (option) should easily pass through the opened outlet diameter.

**If this is not the case (opened outlet diameter too small or too large) individually readjust the opening diameters by twisting the connecting rods:**

- Slacken counter nuts (9.5/5) of connecting rods (9.5/6).
- Open shutter slide.
- Insert setting gauge (9.6/1) into the outlet opening and close the relevant shutter slide (shutter slide now touches the setting gauge).



**Danger of bruising when closing the shutter slides.**

- Twist the relevant connecting rod until the setting levers (9.5/1) are positioned on the pointer.
- Retighten counter nut.



**If no setting gauge is available the outlet opening diameter (9.7/1) can be sight checked. At the opening diameter created when pointer is in position "11" the edge (9.7/2) of the shutter slide has to cut exactly the lower corner (9.7/3) of the outlet opening.**

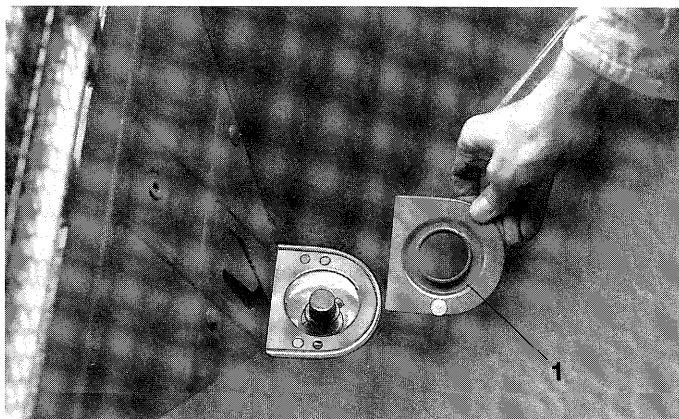


Fig. 9.8

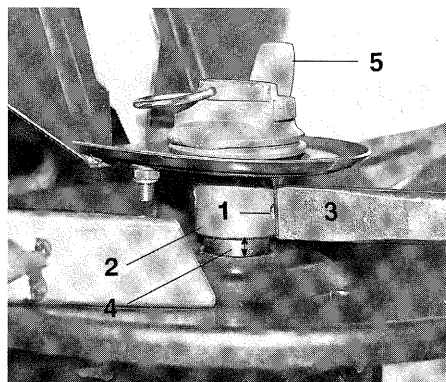


Fig. 9.9

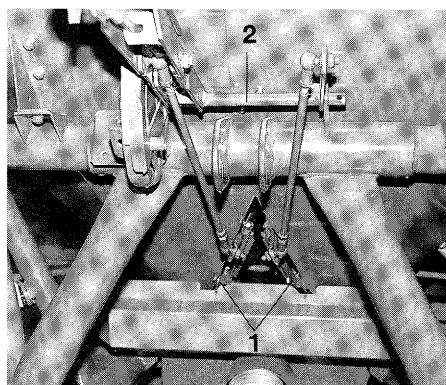


Fig. 9.10





## 9. Wear on hopper bottom

In case of wear the relevant hopper bottom (made from non corrosive material) (9.8/1) can easily be exchanged after the agitator head has been removed.

## 10. Dismantling and fitting of agitator heads

- Drive the expansion sleeves out of the bores (9.9/1).
- Execute slight hammer strokes (with hammer or with hammer and chisel) against the agitator lower part (9.9/2). After every stroke turn the spreading discs by hand.
- Pull agitator heads in the hopper by hand or with a special pulling off device off the spindle of the spreading disc. Mark agitator heads with "right hand" and "left hand".



**When dismantling do not heat the agitator heads or spreading discs with a flame, as the spreading discs would get distorted and the gearbox would be damaged.**

**If no special pulling off device is available:**

- With a chisel (9.9/3) knock a notch in the extension sleeve in the area of the bores (9.9/1) in order to widen the bushing of the agitator head.
- Drive a chisel into the gap (9.9/4) between the agitator head lower edge and the upper edge of the spreading disc. Hereby the agitator head is shifted a bit from the sleeve of the spreading disc.
- Use a second chisel or similar as lever under the first one in order to facilitate the shifting of the agitator head from the spreading disc sleeve.
- When fitting the agitator heads the sense of rotation must be observed. The agitator fingers are provided with an especially wear resistant welded coating (9.9/5). This has always to be placed in front, seen in sense of rotation. Further the agitator finger on the fertiliser flow opening must have a spacing of 6 to 7 mm towards the hopper centre roof (see Fig. 9.4) and the agitator head may not slide on the hopper bottom.



**The agitator finger has to be located above the short. Align with hole in the disc's rim.**

- Secure agitator heads and spreading discs with double expansion sleeves.

## 11. Easy running of shutter slides

The easy running of the shutter slides is set by the guide handles. If necessary slightly release or tighten the guide handles (9.10/1) of the shutter slides. In case of tightness additionally check the bearing of the switching shaft (9.10/2) and adjust.

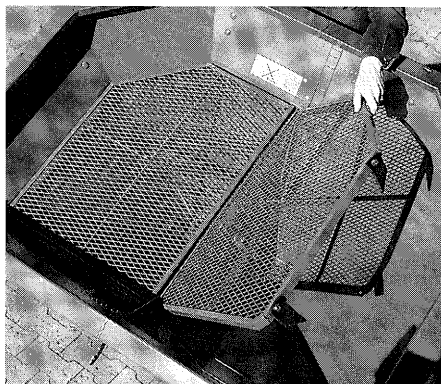


Fig. 10.1

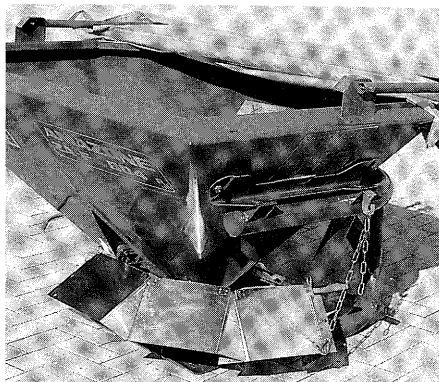


Fig. 10.2

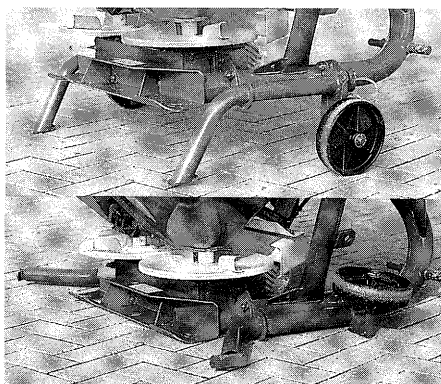


Fig. 10.3

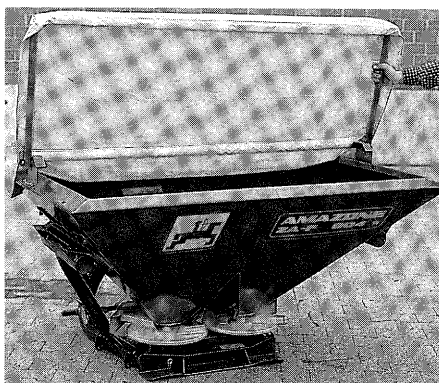


Fig. 10.4



## 10.0 Options

### 10.1 Folding sieve to retain foreign objects, Product-No.: 192 500

Recommended for bulk fertilisers which e.g. are loaded with a front shovel. By the sieve stones, hard soil clods, plant residues etc. are sorted out. (Fig. 10.1)

### 10.2 Boundary spread deflector

For half side border spreading (right hand and left hand side), when the first tramline centre has been created 1.5 to 2.0 m from the field's border. Please also refer to para. 7.4.2 (Fig. 10.2)

ZA-F 402/403,

Product No.: 157 600

ZA-E 604 R, 804 R, 1004 R und 1204 R,

Product No.: 137 600

### 10.3 Mobile stand, Product No.: 133 201 (not for ZA-F 403)

The folding mobile stand allows easy coupling to the three-point linkage of the tractor and an easy manoeuvring within the yard and inside buildings. (Fig. 10.3)



**Only park or move your fertiliser broadcaster with empty hopper (danger of tipping over).**



**When filling hopper directly from tip lorry swivel transport device upwards to the side.**

### 10.4 Folding hopper cover, Product No.: 161 400 (not for ZA-F 403)

The hopper cover assures dry spreading material in wet weather. For filling just swivel upwards the swivelable hopper cover. (Fig. 10.4)

### 10.5 Hopper cover

The hopper cover assures dry spreading material in wet weather. The hopper cover is fixed on the hopper with a rubber strap.

ZA-F 402 / 403,

Product No.: 127 400

ZA-F 603 / 604 R,

Product No.: 112 400

ZA-F 803 / 804 R,

Product No.: 113 400

ZA-F 1003/1203 und 1004 R/1204 R,

Product No.: 114 400

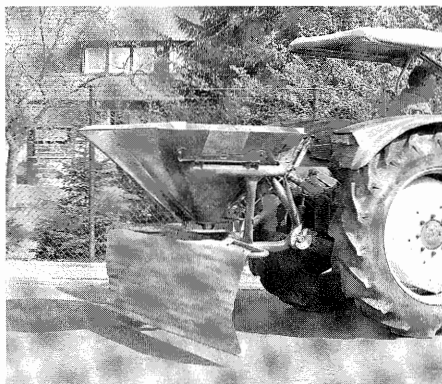


Fig. 10.5

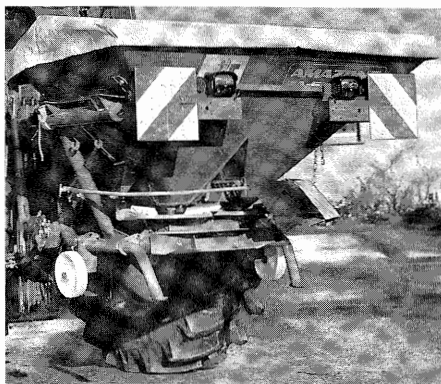


Fig. 10.6

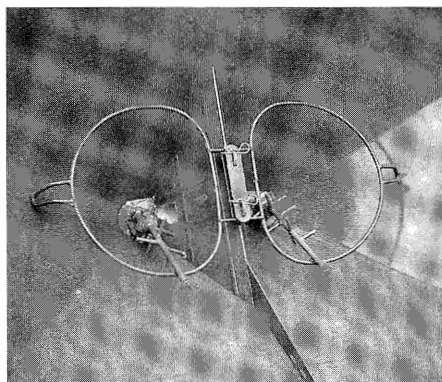


Fig. 10.7

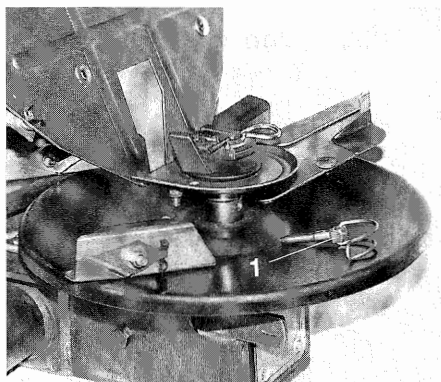


Fig. 10.8



Fig. 10.9

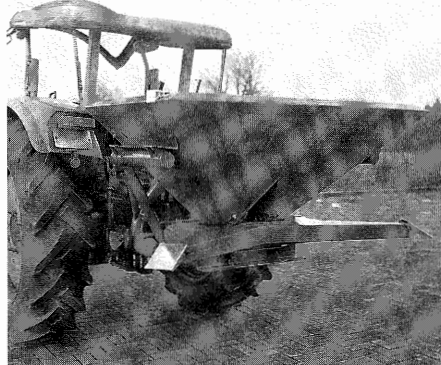


Fig. 10.10



## **10.6 Crop deflector, Product No.: 119 500**

The crop deflector (**Fig. 10.5**) is necessary when the crop is higher than 1 m if the lifting height of the tractor hydraulic does not lift the centrifugal broadcaster sufficiently. It deflects the crop downwards in the spreading disc area.

## **10.7 Traffic lights for AMAZONE-mounted implements**

The traffic light kit (**Fig. 10.6**) can be retrofitted and can be adjusted to various implement widths (up to 3 m).

Required for **AMAZONE ZA-F**:

### **Rear traffic light kit, Product No.: 144 301**

The traffic light kit is bolted onto the hopper rear wall. It consists of: Light combination right hand and left hand; parking warning plates according to DIN 11030; licence plate carrier and connecting cable.

## **10.8 Traffic light carrier, Product No.: 104 900**

Profile for clipping on existing lights.

## **10.9 Mixing agitator, Product No.: 103 420**

The mixing agitator is used for spreading and mixing of moist powdery fertilisers. Fill in layer-wise. The mixing is done automatically during spreading operation. (**Fig. 10.7**)

## **10.10 Agitator head disengagement**

When ordering a new machine it can be equipped with an agitator head disengagement. When being retrofitted, the gearbox has to be exchanged. The relevant agitator head can be disengaged by pulling off the coupling plug (10.8/1) below the relevant hopper tip (e. g. at one-sided spreading on field's borders). When very pressure sensitive fertilisers are being spread, both agitator heads can be disengaged.

## **10.11 Four-row band spreading device, Product No.: 113 500**

The **AMAZONE ZA-F** can be retrofitted with a 4-row band spreading device for under leaf fertilising, especially for maize fertilising. The row spacing can vary to 80 cm (**Fig. 10.9**).

## **10.12 Two-row spreading device for hop, Product No. 101 502**

The **AMAZONE ZA-F** can be retrofitted with the 2-row spreading device for hops. The row spacing can be varied between approx. 2,5 to 5 m). (**Fig. 10.10**)

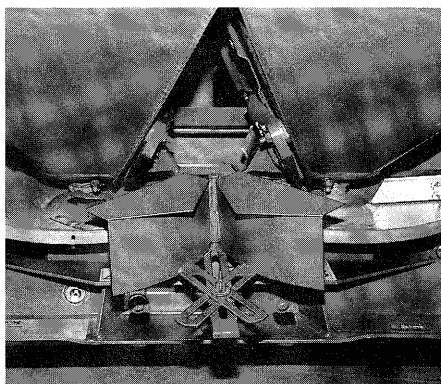


Fig. 10.11

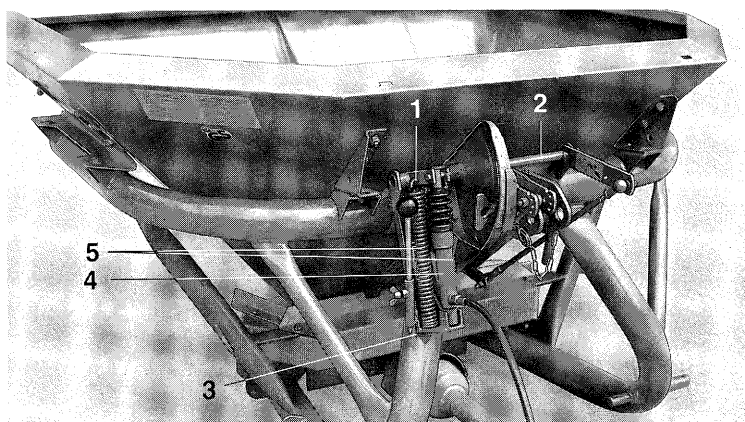


Fig. 10.12

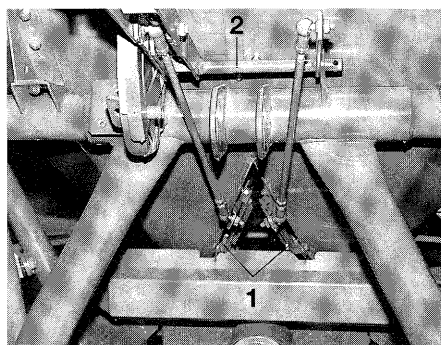


Fig. 10.13



## 10.13 Row spreading device for orchards, Product No.: 117 600

The AMAZONE ZA-F can be retrofitted with the row spreading device for orchards. (Fig. 10.11)

## 10.14 Hydraulic shutter control

Via the hydraulic shutter control both shutters are simultaneously opened and closed. For closing the shutters set control valve on "lifting" and for opening on "lowering".



**To avoid damages on the broadcaster, the tractor's hydraulic system must not exceed 230 bar.**



**In case of leaking control valve and/or longer periods of standstill, e.g. during road transport, shutting the lock taps prevent the closed shutters from opening by themselves.**

### 10.14.1 Hydraulic shutter control "I", Product No.: 123 600

One single acting control valve is required on the tractor. The outlet openings are simultaneously closed by the relevant shutter via hydraulic rams and opened by the spring (Fig. 10.12)

### 10.14.2 Hydraulic shutter control "II", Best.-Nr.: 124 600

One double acting control valve on tractor required. The outlet openings are simultaneously closed and opened by the relevant shutter via hydraulic rams.

### 10.14.3 Fitting the hydraulic shutter control "I" or "II"

- Slide control lever (10.12/1) at the right hand side to the pivot shaft (10.12/2) and connect with the provided expansion sleeves 8 x 45 and 5 x 45 DIN 1481 (they are driven into each other).
- Slide fixing bracket (10.12/3) onto the lever (10.12/1) and fix with 2 bolts M 10 x 20 DIN 933 to the fixing plate on the frame.
- Connect hydraulic ram (10.12/4) with light expansion sleeve 10 x 36 DIN 7346 and bolt M 8 x 45 DIN 931 with the control lever.
- Hook in both springs (10.12/5) on the upper part of the lever.
- Guide both bolts M 10 x 80 DIN 933 from underneath through the fixing bracket (10.12/3) and tension the springs (10.12/5) fully.
- Loosen both shutter guides (10.13/1) and push them all the way upwards. Retighten bolts.
- Connect hydraulic hose (10.12/6).
- Check function. In case of stiff movement disconnect the springs (10.12/5) and disconnect the hydraulic hose. Now, the shutters should move easily. If necessary slightly loosen the guides (10.13/1) of the shutter slides and adjust the pivot shaft (10.12/2).

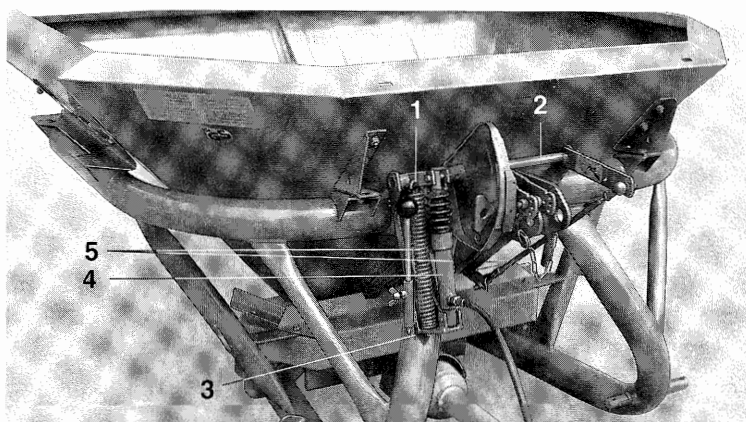


Fig. 10.12

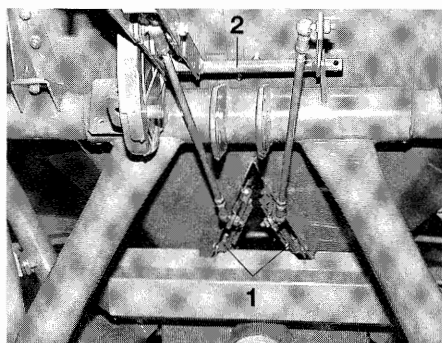


Fig. 10.13

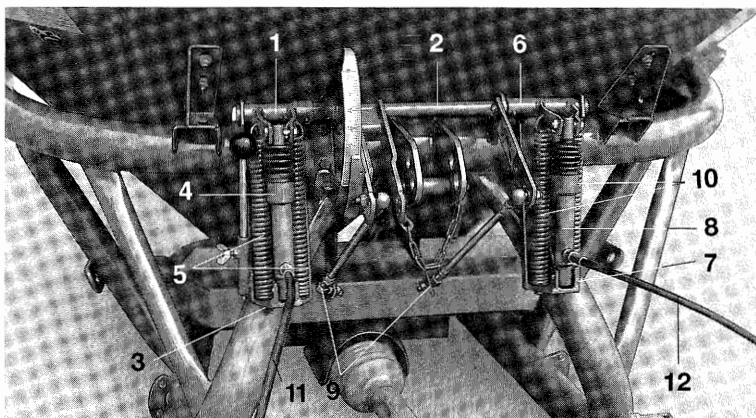


Fig. 10.14





## 10.15 Hydraulic combi lever

With the hydraulic combi lever a single shutter control is achieved so that the shutters can be actuated **independently** from each other for half side spreading. For closing the shutter set the control valve on "lifting" and for opening on "lowering".



**To avoid damages on the broadcaster, the tractor's hydraulic system must not exceed 230 bar.**



**In case of leaking control valve and/or longer periods of standstill, e.g. during road transport, shutting the lock taps prevent the closed shutters from opening by themselves.**

### 10.15.1 Hydraulic combi lever "I", Part No: 125 600

**Two single acting control valves** or the **two-way control unit** (option) are required on tractor. The outlet openings are simultaneously closed by the relevant shutter via hydraulic rams and opened by the spring. (Fig. 10.14)

### 10.15.2 Hydraulic combi lever "II", Part No.: 128 600

**Two double acting control valves** are required on the tractor. The outlet openings are closed and opened by the relevant shutter via hydraulic rams.

### 10.15.3 Fitting the hydraulic combi lever "I" or "II"

- Slide control lever (10.14/1) at the right hand side to the pivot shaft (10.14/2) and connect with the provided expansion sleeves 8 x 45 and 5 x 45 DIN 1481 (they are driven into each other).
- Slide fixing bracket (10.14/3) onto the lever (10.14/1) and fix with 2 bolts M 10 x 20 DIN 933 on the console welded on to the frame.
- Connect hydraulic ram (10.14/4) with light expansion sleeve 10 x 36 DIN 7346 and bolt M 8 x 45 DIN 931 with the control lever (10.14/1).
- Hook in both springs (10.14/5) on the upper part of the lever (10.14/1).
- Slide control lever (10.14/6) at the right hand side to the pivot shaft (10.14/2) and connect with the provided expansion sleeves 8 x 45 and 5 x 45 DIN 1481 (they are driven into each other).
- Slide fixing bracket (10.14/7) with bolted console onto control lever (10.14/6).
- Connect hydraulic ram (10.14/8) with the spacing sleeve 10 x 36 DIN 7346 and bolt M 8 x 45 DIN 931 with the control lever.
- Swivel control lever (10.14/1) into the uppermost position (close shutter (10.14/9) completely) and pull apart the hydraulic ram (10.14/8) completely.
- Bring hydraulic ram (10.14/8) to an alignment with the other hydraulic ram (10.14/4).
- Weld bolted console with the frame (as already standard welded console).
- Hook in both springs (10.14/10) on top of the shutter lever (10.14/6).
- Guide both bolts M 10 x 80 DIN 933 from underneath through the fixing bracket (10.14/7) and fully tension the springs (10.14/10).

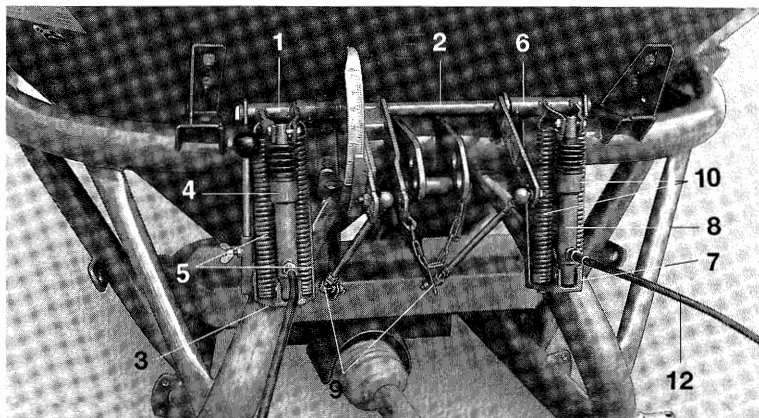


Fig. 10.14

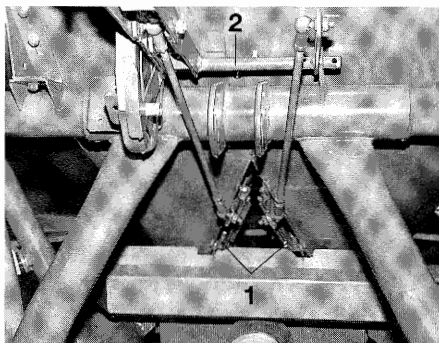


Fig. 10.15

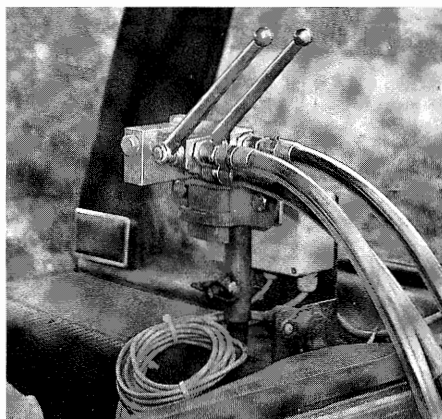


Fig. 10.16

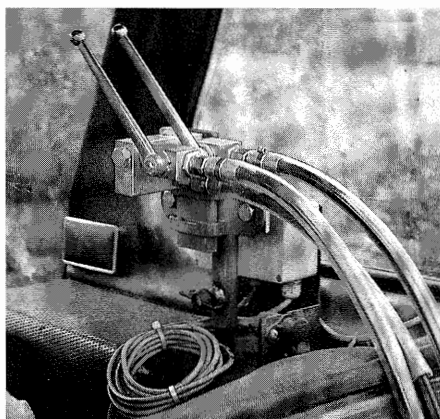


Fig. 10.17



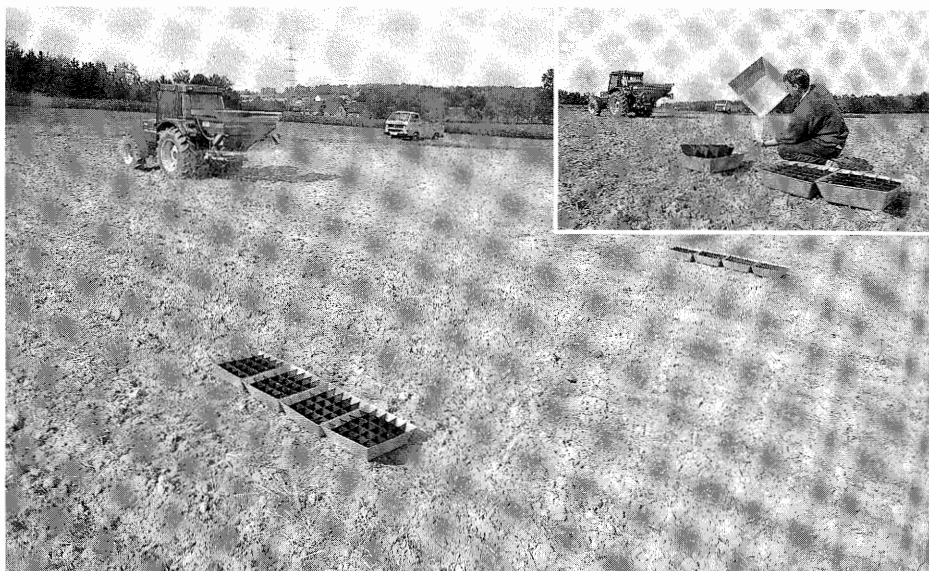


Fig. 10.18

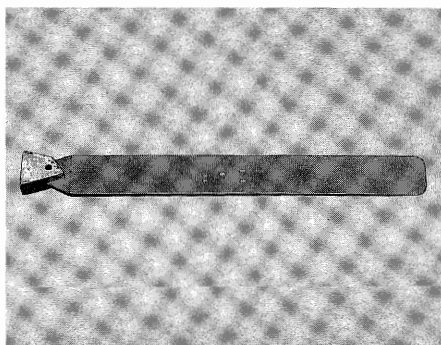


Fig. 10.19



### **10.17 Calibration device, Best.-Nr.: 133 202**

With the calibration device the determination of the shutter slide position (spread rate setting) **without setting chart according to nomograph** is achieved. Hereby the changeable spreading properties of the types of fertiliser are already considered when determining the shutter slide position.

Please also refer to para. 7.2.2.

### **10.18 Mobile fertiliser test kit for working width control, Product No.: 125 900**

The setting figures of the setting chart may only be considered as guide data as spreading properties of the fertilisers may vary. Therefore it is recommended to check the set working width of the broadcaster with the mobile fertiliser test kit (Fig. 10.18). For further details, please refer to the instruction manual for "mobile test kit".

### **10.19 Setting gauge for setting the basic shutter slide position, Product No.: 540 270**

Please refer to para. 9.0, item. 6 (Fig. 10.19)



## 11.0 Combination matrix for fertiliser broadcasters for spreading slug pellets

### Type AMAZONE ZA-F

	Execution					Equipment at random									
descr. of exec..	Hopper					mixing agitator	hydraulic shutter control	row spreading attachment	working width reducer	wall insert	border spreading device	agitat.head diseng.	calibration device	mobile fertil. test kit	dust protection
	400 l	600 l	800 l	1000 l	1200 l										
1	x					-	x	-	-	x	x	x	x	x	-
2		x				-	x	-	-	x	x	x	x	x	-
3			x			-	x	-	-	x	x	x	x	x	-
4				x		-	x	-	-	x	x	x	x	x	-
5					x	-	x	-	-	x	x	x	x	x	-



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Subsidiaries in England and France

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Soil cultivation machinery. Field Boom Sprayers. Municipal machinery.